



THE CITY OF SAN DIEGO

DEVELOPMENT SERVICES DEPARTMENT

Date of Notice: JUNE 14, 2011

**PUBLIC NOTICE OF AVAILABILITY FOR A
RECIRCULATED DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT
INTERNAL ORDER NUMBER: 21000287**

The City of San Diego Entitlements Division has prepared a Recirculated draft Program Environmental Impact Report (PEIR) for the following project in accordance with Section 15088.5(a) of the State CEQA Guidelines which requires that an EIR be recirculated for an additional public review when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review, but before certification. Information, resulting in the need to recirculate an EIR can include changes in the project or environmental setting as well as additional data or other information. This Recirculated draft PEIR is consistent with the requirements of Section 15088.5(a) of the CEQA Guidelines.

This Recirculated draft PEIR addresses modifications to the Master Storm Water System Maintenance Program, Master Program (Master Program) which were made subsequent to preparation of the previous Final PEIR, dated March 17, 2010 and includes additional information that has become available since public review of the original PEIR.

In accordance with CEQA Section 15088.5(f)(1), the City is requiring reviewers to submit new comments on the Recirculated PEIR. As the comments and associated responses to the original PEIR are included in Appendix A.2, **the Final Recirculated PEIR will only include responses to comments submitted during the public review period for the Recirculated PEIR. Your comments must be received by JULY 29, 2011 to be included in the final document considered by the decision-making authorities.** Please send your written comments to the following address: **Myra Herrmann, Environmental Planner, City of San Diego Development Services Center, 1222 First Avenue, MS 501, San Diego, CA 92101** or e-mail your comments to DSDEAS@sandiego.gov with the Project Number in the subject line.

General Project Information:

- Project: **MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (MSWSMP)**
- Project No. **42891**, SCH No. **2004101032**
- Community Plan Area: **CITYWIDE** Council District: **ALL COUNCIL DISTRICTS**

Applicant: City of San Diego, Transportation & Storm Water Department, Storm Water Division

Subject: MASTER SITE DEVELOPMENT (SDP) and COASTAL DEVELOPMENT PERMIT (CDP) for the long-term maintenance of storm water facilities maintained by the Storm Water Division (SWD) of the City of San Diego's Transportation and Storm Water Department (T&SWD). The storm water facilities include a series of natural and/or constructed drainage channels. The Master Program identifies the maintenance activities anticipated to be carried out for each storm water facility. The Master Program also establishes a series of protocols to be carried out during maintenance activities that are intended to minimize impacts related to soil and erosion, water quality, and wildlife disruption.

On an annual basis, the SWD would identify specific maintenance activities to be undertaken the next fiscal year which would then be subject to a Substantial Conformance Review (SCR) process to allow maintenance activities to proceed under the terms of the master permits. The SCR package would include an Individual Maintenance Plan (IMP), Individual Biological Assessment (IBA), Individual Historical Assessment (IHA), Individual Hydrologic and Hydraulic Assessment (IHHA), Individual Water Quality Assessment (IWQA), and Individual Noise Assessment (INA) prepared for each storm water facility prior to maintenance to evaluate the current capacity and the condition and extent of sensitive resources within the facility, and maintenance activity details such as method(s) and equipment to be used, maintenance requirements, and schedule.

The SCR package would be evaluated by designated City departments as well as state and federal agencies to confirm that the proposed maintenance activities would be consistent with the Master Program, and that environmental impacts would be mitigated pursuant to the Mitigation Monitoring and Reporting Program. Following the SCR process, the specific maintenance activities would be authorized through one of three of the City's approval processes. If the maintenance activity is fully consistent with the Master Program and PEIR, Process One would apply. If a consistent activity would occur in the Coastal Zone, Process Two would apply. If the activity is not included in the Master Program and PEIR, Process Four would apply.

Recommended Finding: The Draft PEIR concludes that the project would result in significant, but mitigated impacts to **Historical and Paleontological Resources (Direct), Biological Resources (Direct/Indirect), Land Use (MSCP/MHPA) (Direct) and Water Quality (Direct)**. Cumulative impacts related to the following issues would be significant and unmitigated: **Aesthetics/Neighborhood Character, Air Quality, Greenhouse Gases, Biological Resources, Historical and Paleontological Resources, and Solid Waste Disposal**.

Availability in Alternative Format: To request this Notice, the Recirculated Program Environmental Impact Report (PEIR), Initial Study, and/or supporting documents in alternative format call the Development Services Department at 619-446-5460 or (800) 735-2929 (TEXT TELEPHONE).

Additional Information: For environmental review information, contact Myra Herrmann at (619) 446-5372. The recirculated draft PEIR has been posted on the City's website at <http://www.sandiego.gov/stormwater/>. Although not part of the CEQA process, informational meetings will be held by the Storm Water Division. See the Think Blue website for more details. The draft PEIR, Initial Study, and supporting documents may be reviewed or purchased for the cost of reproduction, at the Fifth floor of the Development Services Center. For information regarding public hearings on this project, contact Project Manager Patricia Grabski at (619) 446-5277. This notice was published in the SAN DIEGO DAILY TRANSCRIPT, placed on the City of San Diego web-site (<http://www.sandiego.gov/city-clerk/officialdocs/notices/index.shtml>) and distributed on **JUNE 14, 2011**.

Cecilia Gallardo, AICP
Assistant Deputy Director
Development Services Department



ENTITLEMENTS DIVISION
(619) 446-5460

RECIRCULATED ENVIRONMENTAL IMPACT REPORT

Project No. 42891
SCH No. 2004101032

SUBJECT: MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (Master Program):
MASTER SITE DEVELOPMENT (SDP) and COASTAL DEVELOPMENT PERMIT (CDP) for the long-term maintenance of storm water facilities maintained by the Storm Water Division (SWD) of the City of San Diego's Transportation and Storm Water Department (T&SWD). The storm water facilities include a series of natural and/or constructed drainage channels. The Master Program identifies the maintenance activities anticipated to be carried out for each storm water facility. The Master Program also establishes a series of protocols to be carried out during maintenance activities that are intended to minimize impacts related to soil and erosion, water quality, and wildlife disruption.

On an annual basis, the SWD would identify specific maintenance activities to be undertaken the next fiscal year which would then be subject to a Substantial Conformance Review (SCR) process to allow maintenance activities to proceed under the terms of the master permits. The SCR package would include an Individual Maintenance Plan (IMP), Individual Biological Assessment (IBA), Individual Historical Assessment (IHA), Individual Hydrologic and Hydraulic Assessment (IHHA), Individual Water Quality Assessment (IWQA), and Individual Noise Assessment (INA) prepared for each storm water facility prior to maintenance to evaluate the current capacity and the condition and extent of sensitive resources within the facility, and maintenance activity details such as method(s) and equipment to be used, maintenance requirements, and schedule. The SCR package would be evaluated by designated City departments as well as state and federal agencies to confirm that the proposed maintenance activities would be consistent with the Master Program, and that environmental impacts would be mitigated pursuant to the Mitigation Monitoring and Reporting Program. Following the SCR process, the specific maintenance activities would be authorized through one of three of the City's approval processes. If the maintenance activity is fully consistent with the Master Program and PEIR, Process One would apply. If a consistent activity would occur in the Coastal Zone, Process Two would apply. If the activity is not included in the Master Program and PEIR, Process Four would apply.

Applicant: City of San Diego, Transportation and Storm Water Department, Storm Water Division.

The City has prepared a Recirculated PEIR to address modifications to the Master Program which were made subsequent to preparation of the Final PEIR (referred to as the “original” PEIR) for this project dated March 17, 2010. This Recirculated PEIR also includes additional information that has become available since the public review of the original PEIR. Most notably, this Recirculated PEIR includes additional information on water quality effects which are derived from an analysis commissioned by the City after public review of the original PEIR.

Section 15088.5(a) of the CEQA Guidelines requires that an EIR be recirculated for an additional public review when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review, but before certification. Information, resulting in the need to recirculate an EIR can include changes in the project or environmental setting as well as additional data or other information. This recirculation is consistent with the requirements of Section 15088.5(a) of the CEQA Guidelines.

In addition, in accordance with CEQA Section 15088.5(f)(1), the City is requiring reviewers to submit new comments on the Recirculated PEIR. As the comments and associated responses to the original PEIR are included in Appendix A.2, the Final Recirculated PEIR will only include responses to comments submitted during the public review period for the Recirculated PEIR.

CONCLUSIONS:

This Recirculated Program Environmental Impact Report (PEIR) addresses the potential environmental effects of maintenance activities associated with the proposed Master Storm Water System Maintenance Program (Master Program). The proposed discretionary actions consist of a Master Site Development Permit (City of San Diego), Master Coastal Development Permit (City of San Diego), Section 404 Permit (U.S. Army Corps of Engineers [Corps]), Streambed Alteration Agreement (California Department of Fish and Game [CDFG]), and 401 Certification (California Regional Water Quality Control Board [RWQCB]). If surface discharges of water are involved, maintenance would require a Wastewater Discharge Permit from the RWQCB.

The Recirculated PEIR addresses modifications to the Master Program which were made subsequent to preparation of the Final PEIR, dated March 17, 2010 (hereafter referred to as the “original” PEIR). This Recirculated PEIR also includes additional information that has become available since the public review of the original PEIR. Most notably, this Recirculated PEIR includes additional information on water quality effects which were derived from an analysis commissioned by the City after public review of the original PEIR. A more detailed discussion of these changes is contained in Section 3.5, History of the Project, of the Recirculated PEIR.

In light of the changes to the Master Program, comments received on the original PEIR, and the additional water quality analysis, the City modified the original PEIR and is recirculating it for an additional 45 days. Although not required by CEQA, the City included the responses to the comments received during the public review of the original PEIR to make this information readily

available during the review of the PEIR. These comments and corresponding responses are located in Appendix A.2 of the PEIR.

In accordance with Section 15088.5(f)(1), the City is requiring reviewers to submit new comments on the Recirculated PEIR. As the comments and associated responses to the original PEIR are included in Appendix A.2, the Final Recirculated PEIR will only include responses to comments submitted during the public review period for the Recirculated PEIR.

The PEIR addresses the following major environmental issues: aesthetics/neighborhood character, air quality, biological resources, historical resources, hydrology, land use, noise, paleontological resources, and water quality. Direct impacts with respect to biological resources, historical resources, land use policy, paleontological resources, and water quality are considered significant but mitigable. Direct impacts with respect to aesthetics/neighborhood character, air quality, greenhouse gas (GHG) emissions, hydrology, noise, and solid waste disposal are considered not significant. Cumulative impacts related to the following issues would be significant and unavoidable: aesthetics/neighborhood character, air quality, biological resources, GHG emissions, historical resources, paleontological resources, solid waste, and water quality.

SIGNIFICANT UNMITIGATED IMPACTS:

Aesthetics/Neighborhood Character (Cumulative)

The removal of well-developed riparian vegetation associated with natural drainages in order to improve the ability of these drainages to convey flood water would diminish the aesthetic value of the natural drainages. While the direct impact of maintenance on the aesthetic/neighborhood character value would be avoided by preserving mature trees spaced at least 50 feet apart during maintenance, the loss of wetland vegetation in combination with other future development in the City would result in an unavoidable significant cumulative impact, based on the conclusions of the City's General Plan PEIR.

Air Quality (Cumulative)

The proposed Master Program would generate nominal emissions for criteria pollutants but the levels would not exceed the thresholds for criteria pollutants. However, given the importance of air quality, the project would contribute to the cumulatively significant impacts identified in the General Plan EIR. Thus, the proposed project would have significant cumulative impacts with respect to criteria air pollutants which would be unavoidable.

Biological Resources (Cumulative)

The proposed project would result in the loss of wetland and upland habitat as well as associated sensitive plants and animals. Although measures are proposed to mitigate for the direct impacts of maintenance on biological resources, the proposed project would still contribute to the City-wide loss of biological resources anticipated by the General Plan PEIR. Thus, the cumulative impact to biological resources associated with the proposed project is considered cumulatively significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to biological resources.

GHG Emissions (Cumulative)

The GHG emissions produced during maintenance would contribute to the cumulatively significant, unavoidable climate change impacts identified in the General Plan EIR. Thus, the proposed project would have significant cumulative impacts with respect to GHG emissions which would be unavoidable.

Historical Resources (Cumulative)

The proposed project could result in impacts to pre-historic resources located along or within natural drainage courses. Although measures are proposed to mitigate for the impacts to prehistoric resources, the degree to which these measures would be able to reduce cultural resource impacts is unknown. Thus, the cumulative impact to cultural resources associated with the proposed project is considered cumulatively significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to cultural resources.

Paleontological Resources (Cumulative)

Although maintenance activities are not expected to often penetrate areas which exhibit a moderate to high potential for significant fossil deposits, impacts may still occur that would contribute to City-wide impacts. Thus, the project could have cumulatively significant impacts that would be unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to paleontological resources.

Solid Waste Disposal (Cumulative)

The majority of the vegetation and a portion of the sediment removed in the course of maintenance would be taken to local landfills for disposal. Combined with the demand created for landfill space by future development in the metropolitan area, the proposed maintenance activities would have a significant cumulative impact with respect to solid waste disposal. Maintenance protocols are included in the Master Program that would encourage recycling of vegetation, but some of the vegetation (most notably, Arundo) is too fibrous for recycling; in which case, landfill disposal would

be required. Thus, the project impacts with respect to solid waste disposal are considered significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to solid waste.

Water Quality (Cumulative)

Storm water facility maintenance is expected to have both positive and negative impacts on water quality. Negative impacts on water quality would be associated with erosion and sedimentation during and following excavation activities, diminished contaminant removal capacity, introduction of hazardous materials related to the operation of mechanized equipment use (e.g., fuels, etc.), trash generation related to maintenance operations/crews, and the dewatering of dredged material. On the other hand, maintenance may have a positive effect on water quality. Removal of polluted sediment and plant material during maintenance would have a positive impact by removing pollutants that have bonded to these materials. The net effect of maintenance on water quality would be dependent on whether the loss of pollutant treatment capacity would be outweighed by the reduction in contaminants that would occur from excavation of contaminated sediment and plant material.

In light of the fact that cumulatively, potentially unavoidable, significant impacts on water quality were identified in the General Plan PEIR, the Master Program could result in significant cumulative water quality impacts that may be unavoidable.

RECOMMENDED ALTERNATIVES FOR REDUCING SIGNIFICANT UNMITIGATED IMPACTS:

Based on the requirement that alternatives meet most of the basic objectives of the proposed project and reduce significant impacts associated with the proposed project, the PEIR analyzes the alternatives which would reduce the need for regular maintenance of storm water facilities. These alternatives include:

- Raising the channel banks by constructing walls or berms along the top of the channels;
- Diverting storm water in pipes around constrained segments;
- Widening channels to accommodate vegetation; and/or
- Off-site Runoff Reduction.

In addition, the PEIR considers the following No Project Alternatives:

- No Project: No Maintenance Alternative; and
- No Project: Maintenance With Separate Permits Alternative.

Based on the analysis in the PEIR, the No Project: No Maintenance Alternative is considered the environmentally-preferred alternative because it would eliminate all impacts associated with the

proposed project. The Off-site Runoff Reduction Alternative would be the next environmentally preferred alternative but it is considered infeasible, as discussed below.

No Project: No Maintenance Alternative

Under this alternative, the City would not conduct any maintenance activities within the storm water system. Vegetation would grow unchecked within the channels and sediment would not be removed.

Although this alternative would avoid all impacts of the proposed project, the City rejected the alternative because it would not fulfill the basic objective to protect life and property from flooding. The overgrowth within the storm water facilities that would occur from lack of regular maintenance would impede flood waters and cause flooding.

No Project: Maintenance With Separate Permits Alternative

Under this alternative, storm water maintenance would occur pursuant to separate permits issued for individual maintenance projects, as it has been historically done in the City. In addition, a Master Program would not be adopted to guide future maintenance activities. Thus, no comprehensive maintenance protocols and individual technical assessments would be performed prior to maintenance.

This alternative would not result in a reduction of environmental maintenance because maintenance would still be performed. Other potential impacts related to aesthetics/neighborhood character, historical resources, land use policy, solid waste and water quality would be comparable to the proposed project.

Maintenance with separate permits was rejected by the City because it would not provide the comprehensive approach to maintenance which characterizes the proposed Master Program. State and federal agencies with jurisdiction over wetlands have all expressed concern about the way the City has conducted storm water maintenance in the past. Historically, the City has conducted maintenance under separate Streambed Alteration Agreements and Section 404 Permits. As a result, mitigation has been on a case by case basis. These agencies have also objected to the fact that separate permits do not allow consideration of cumulative effects of maintenance activities or the creation of larger more viable mitigation areas.

Raised Bank Alternative

Under this alternative, structures (e.g. levees or walls) would be added along the top of channels to allow them to contain vegetation without compromising their ability to convey flood waters. The structures would offset the effect of vegetation and sediment by allowing water elevations to increase without spilling out into adjacent developed areas. However, accumulation of sediment and vegetation would ultimately eliminate the increased flood capacity created by the structures. Channel-specific engineering would be undertaken to determine the additional “bank” height needed.

Although this alternative would potentially impact less wetlands, allow natural removal of urban pollutants to continue and generate less solid waste, the City rejected the alternative for factors related to impacts to wildlife habitat, cost, visual quality, public safety, and the temporary nature of the solution. With respect to wildlife habitat, the structures along storm water facilities would have an adverse impact on wildlife by making it more difficult for upland wildlife to access the channels for water, food and cover. Walling off the storm water facilities would also have an adverse visual impact. With respect to public safety, allowing the channels to fill with sediment could block side drains that empty into the channels which could cause water to back up and flood adjacent public and/or private properties. This accumulation of sediment would likely eventually offset the additional capacity created by the structures.

With respect to financial feasibility, the cost of designing and constructing structures along existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to construct the structures. Given the number of miles of drainage channels within the City, the cost of increasing flood capacity by constructing walls or levees is considered infeasible. Funding would be required to design and construct these structures. Council Policy 800-04 (Drainage Facilities) states that all projects with significant or total funding by the City shall be specifically identified and scheduled in the Capital Improvement Program (CIP). Council Policy 800-14 (Prioritizing CIP Projects) outlines the prioritization and funding policy for which projects compete. The prioritization process allows for the analytical comparison of the costs and benefits of individual project as well as providing an opportunity to evaluate projects against one another on their relative merits. This alternative would, therefore, compete with other CIP projects for funding and implementation. Construction could be delayed indefinitely until funding is available while the need to maintain facilities would still exist. Also, due to the uncertainty associated with the ultimate approval of these structures as a CIP project, this alternative is considered infeasible.

Channel By-Pass Alternative

This alternative would involve construction of underground pipes that would divert some or all of the runoff around a channel segment to allow the channel to be naturally vegetated. Channel-specific engineering would be undertaken to determine the location and sizing of by-pass pipes to assure that vegetated channel segments can continue to support vegetation without resulting in flooding.

Although this alternative would be the next environmentally-preferred alternative (after the No Maintenance Alternative) because it could potentially result in reduced impacts related to wetlands, water quality and solid waste disposal, the City rejected the alternative as financially infeasible. As with the Raised Bank Alternative, the cost of constructing the by-pass pipes would be high. Beyond the cost of acquiring easements, adjacent development would make it difficult to construct by-pass pipes without impacting structures including homes and businesses. Condemning structures would further add to the cost of the by-pass alternative. As discussed with the Raised Bank Alternative, pursuant to Council Policy 800-14, this alternative would compete with other CIP projects for funding and implementation. Construction could, therefore, be delayed indefinitely until funding is available, or never occur because the by-pass structures would not be approved as a CIP project.

In addition, this alternative would not be effective in the long-term because accumulation of sediment in the main channel would likely eventually offset the additional capacity created by the by pass. Given these cost factors, accommodating flood waters with by-pass pipes is considered infeasible. Lastly, by-pass pipes could physically impact or burden adjacent property owners related to construction of pipelines and/or easement acquisition.

Widened Channel Alternative

Under this alternative, the configuration of channels would be modified to increase the volume capacity of the channel. The goal of increasing the channel volume would be to enable vegetation to exist in the channel without causing flooding. Channel-specific hydraulic analysis would be undertaken to determine the additional width needed. In most cases, the capacity would likely be increased by widening the cross-section of the channel. Increasing the depth of the channel would also increase capacity but is expected to be difficult to achieve in most cases due to constraints imposed by the slope limitations on the channel banks and maintaining downstream gradients.

Allowing vegetation to remain in the widened channels would reduce the impact of maintenance on water quality and solid waste. The vegetation remaining within the channels would allow the natural process of urban pollutant control to continue. This alternative would also reduce the long-term impact on solid waste disposal. Although the initial widening effort would generate plant material requiring offsite disposal, subsequent clearing and related disposal would be reduced in the long-term.

Although this alternative would allow vegetation to remain over some portion of the widened channels without periodic maintenance, the initial widening would impact the same amount of vegetation as the full maintenance approach. However, since a portion of the vegetation within a widened channel would be allowed to remain during future maintenance, the long-term impact of maintenance on wetland habitat would be reduced. Also, as with the proposed project, the actions within channels would not result in the permanent loss of the channels themselves.

The City considers this to be an infeasible alternative to the proposed Master Plan for social and economic reasons. With respect to economic feasibility, the cost of designing and widening existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to accommodate widening. As discussed with the Raised Bank Alternative, pursuant to Council Policy 800-14, this alternative would compete with other CIP projects for funding and implementation. Construction could, therefore, be delayed indefinitely until funding is available, or never occur because the widening would not be approved as a CIP project. With respect to social issues, as with the other alternatives, widening of the channels would impact adjacent homes as businesses through the loss of property and/or the need to complete relocation.

Off-Site Runoff Reduction Alternative

The Off-site Runoff Reduction Alternative would involve implementing low impact development (LID) Best Management Practices and Integrated Management Practices (BMPs/IMPs) within the affected watersheds to substantially reduce associated runoff generation and flows into storm water facilities included in the Master Program. The use of LID BMPs/IMPs could involve: (1) reducing impervious surfaces through the use of vegetation or permeable pavement, and reducing impervious surfaces and compaction in landscaped and open space areas; (2) directing runoff into pervious areas (e.g., landscaping); (3) directing runoff into engineered IMP sites (e.g., bioretention facilities, planter boxes, cisterns or infiltration facilities); and/or (4) creating self-contained/self-treating drainage management areas (DMAs) such as green roofs or basins.

This alternative would, by nature, be implemented in areas outside the storm water facilities. The Off-site Runoff Reduction Alternative would target retrofitting LID BMPs/IMPs in applicable existing developed areas because sites with new development are already subject to storm water standards requiring the use of LID BMPs/IMPs.

To the extent this alternative would be able to minimize or eliminate the need for removing vegetation and sediment to improve floodwater conveyance, this alternative would reduce impacts of the proposed Master Program related to aesthetics/neighborhood character, biological resources, cultural resources and water quality. Cumulative aesthetic/neighborhood character impacts would be lessened by reducing the number of trees that require removal to improve conveyance of flood water. Similarly, the ability to leave wetland vegetation within the storm water facilities, due to reductions in storm runoff, would proportionately reduce impacts to biological resources related to the proposed Master Program. Lastly, the LID BMPs/IMPs would reduce the urban pollutants reaching the storm water facilities, and minimize the impacts of storm water facility maintenance on the ability of the storm water facilities to remove water-borne pollutants.

Although the Off-site Runoff Reduction Alternative could potentially result in fewer impacts to aesthetic/neighborhood character and biological resources, it was rejected by the City as financially infeasible and posing a burden on adjacent property owners. The cost of constructing and maintaining adequate LID BMPs/IMPs to generate a meaningful reduction in runoff, while

unknown, would likely be high due to the anticipated extensive nature of BMPs/IMPs that would be required. In addition to construction and long-term maintenance costs, the City would incur additional costs related to acquiring private property/easements for the placement of BMPs/IMPs. In addition to cost and acquisition issues, the timing associated with a substantial reduction of off-site surface water generation is problematic. Although future development projects are required to incorporate LID concepts, the rate at which this occurs is likely to be extremely protracted, given today's economic conditions. Thus, it may take decades for enough new development to incorporate LID concepts to result in a substantial reduction in storm water runoff and the associated maintenance activities. Based on these considerations, the Off-site Runoff Reduction Alternative is considered infeasible as a stand-alone alternative to the proposed Master Program.

MITIGATION, MONITORING AND REPORTING PROGRAM INCORPORATED INTO THE PROJECT:

A series of mitigation measures are identified in the PEIR to reduce environmental impacts. These measures are summarized below. The detailed mitigation measures are contained in Chapter 11 of the PEIR.

LAND USE (DIRECT)

Implementation of the following mitigation measures would reduce impacts related to maintenance noise impacts on sensitive birds protected under the City's Environmentally Sensitive Lands Regulation to below a level of significance.

Mitigation Measure 4.1.1 requires verification that all MHPA boundaries and limits of work have been delineated on all maintenance documents.

Mitigation Measure 4.1.2 requires a qualified biologist to survey areas suspected to serve as habitat (based on historical records or site conditions) for sensitive birds covered by the MSCP.

Mitigation Measure 4.1.3 requires, if a listed species is located within 500 feet of a proposed maintenance activity and maintenance would occur during the associated breeding season, an analysis of the noise generated by maintenance activities to identify the location of the 60 dB(A) Leq noise contour and identify measures to be undertaken during maintenance to reduce noise levels.

Mitigation Measure 4.1.4 requires the Project Biologist to determine if maintenance has the potential to impact breeding activities of listed species. If impacts could occur, maintenance, maintenance would be restricted during the breeding season unless maintenance is required to protect life and property.

Mitigation Measure 4.1.5 requires, if maintenance cannot be avoided during the breeding season for a listed bird, monitoring the nearby breeding bird activities by a qualified acoustician and biologist to determine the effectiveness of noise attenuation measures. If the noise attenuation is

determined to be inadequate, the associated maintenance activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season of the subject species.

Mitigation Measure 4.1.6 requires a pre-maintenance meeting where the Project Biologist to discuss the sensitive nature of the adjacent habitat with the crew and subcontractor. The area of maintenance would be clearly delineated before the meeting.

Mitigation Measure 4.1.7 requires maintenance plans be designed to avoid the use of invasive plants, control lighting, delineate disturbance areas and limits of work, and manage trash.

Mitigation Measure 4.1.8 requires the Multi-Habitat Planning Area (MHPA) boundaries and measures to protect coastal California gnatcatchers be shown on the maintenance plans.

BIOLOGICAL RESOURCES (DIRECT)

Implementation of the following mitigation measures would reduce impacts related to sensitive biological resources to below a level of significance.

Mitigation Measure 4.3.1 requires an IBA be prepared based on the IMP prior to commencing maintenance to quantify the impacts to biological resources based on the MMRP, prior to commencing maintenance.

Mitigation Measure 4.3.2 prohibits initiation of maintenance activities before the City's Assistant Deputy Director (ADD) Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IBAs including required mitigation for each of the proposed activities.

Mitigation Measure 4.3.3 prohibits any maintenance activities until the City's ADD Environmental Designee and Mitigation Monitoring Coordinator (MMC) have approved the qualifications of the biologists who will monitor maintenance activities which may impact sensitive biological resources.

Mitigation Measure 4.3.4 requires creation of a mitigation account to ensure sufficient funds to implement all biological mitigation required for the proposed maintenance activities.

Mitigation Measure 4.3.5 requires evidence of compliance with other permitting authorities, if applicable, before maintenance begins.

Mitigation Measure 4.3.6 requires a pre-maintenance meeting be held with the maintenance workers and the monitoring biologist to review mitigation measures included in the IBA.

Mitigation Measure 4.3.7 requires the monitoring biologist to submit a letter report within three months of the end of maintenance describing the monitoring activities and any remedial measures

taken to mitigate biological impacts associated with each maintenance activity. Within 90 days of receiving comments on the draft monitoring report, one copy of the final monitoring report shall be submitted to the MMC.

Mitigation Measure 4.3.8 requires the monitoring biologist to submit an annual summary of the monitoring activities and any remedial measures taken to minimize biological impacts within six months of the end of the annual storm water facility maintenance program.

Mitigation Measure 4.3.9 requires mitigation for wetland impacts to occur within the same watershed as the impact, unless no suitable location exists within the watershed. Mitigation sites are chosen based on best mitigation value. In addition, mitigation plans must be prepared prior to any maintenance activity that could impact significant biological resources. These plans must identify success criteria and include a maintenance and monitoring program to assure that the success criteria are met. Mitigation will be accomplished through one or a combination of the following methods: enhancement, restoration, creation, or mitigation credit acquisition. Specific mitigation ratios must be in accordance with Table 4.3-10 of PEIR.

Mitigation Measure 4.3.10 requires a wetland mitigation plan be prepared in accordance with the Conceptual Wetland Restoration Plan contained in Appendix H of the Biological Technical Report, included as Appendix D.3 of the PEIR.

Mitigation Measure 4.3.11 requires impacts to upland vegetation be compensated through payment into the City's Habitat Acquisition Fund, habitat preservation, or purchase of suitable mitigation credits. Specific mitigation ratios must be in accordance with Table 4.3-11 of the PEIR. The upland mitigation must occur within six months of the date the related maintenance has been completed.

Mitigation 4.3.12 requires impacted, occupied coastal California gnatcatcher habitat be compensated through acquisition of suitable habitat or mitigation credits at a ratio of 1:1. The mitigation must take place within the MHPA and must be accomplished within six months of the date maintenance is completed.

Mitigation Measure 4.3.13 requires the monitoring biologist to confirm that mitigation actions (e.g., sensitive resource fencing, noise attenuation measures and equipment setbacks) have been adequately implemented before maintenance begins and monitor maintenance activities, when required.

Mitigation Measure 4.3.14 requires the City to conduct an environmental review of the proposed mitigation plan in accordance with CEQA and implement any mitigation measures needed to reduce impacts on biological resources resulting from offsite mitigation

Mitigation Measure 4.3.15 requires impacts to listed or endemic sensitive plant species to be offset through implementation of one or combination of: salvage and relocation; seed collection and replanting off site; and/or preservation of offsite populations.

Mitigation Measure 4.3.16 requires specific distance setbacks for maintenance activities from habitat and/or nests associated with sensitive animals.

Mitigation Measure 4.3.17 restricts clearing, grubbing, or grading during the breeding season of sensitive bird species.

Mitigation Measure 4.3.18 requires that a qualified biologist submit evidence to the ADD and any applicable resource agency which demonstrates whether or not sensitive breeding birds could be present, triggering the requirement for implementation of mitigation measure 4.3-20.

Mitigation Measure 4.3.19 requires the presence of sensitive birds be assumed if suitable habitat may be affected by maintenance noise but specific surveys are not conducted. In this event, the City would comply with Mitigation Measure 4.3-20.

Mitigation Measure 4.3.20 specifies that, if no surveys are completed and no sound attenuation devices are installed, maintenance activities that would generate more than 60dB(A) L_{eq} within the habitat requiring protection shall cease for the duration of the breeding season of the appropriate species and a qualified biologist shall establish a limit of work.

Mitigation Measure 4.3.21 requires a pre-maintenance survey for raptor nests if maintenance occurs during the raptor breeding season (January 15 to August 31). If active raptor nests are found, maintenance is prohibited within distances which are specific to the affected raptor until any fledglings have left the nest.

Mitigation Measure 4.3.22 requires trees and/or grasslands supporting active raptor nests not be removed until after the breeding season or until the young have fledged.

Mitigation Measure 4.3.23 requires avoidance or minimization measures when maintenance activities occur at known localities for listed fish species or within suitable habitat for other highly sensitive aquatic species (i.e., southwestern pond turtle).

Mitigation Measure 4.3.24 requires the boundaries of listed and/or narrow endemic plants, to be clearly delineated with flagging or temporary fencing that must remain in place for the duration of the activity.

Mitigation Measure 4.3.25 precludes maintenance within or adjacent to avian nesting habitat during breeding season (January 15 to August 31) unless postponing maintenance would result in a threat to human life or property.

HISTORICAL RESOURCES (DIRECT)

Implementation of the following mitigation measures would reduce impacts to significant historical resources, which may be encountered in the course of maintenance activities, to below a level of significance.

Mitigation Measure 4.4.1 requires an Individual Historical Assessment (IHA) prior to any maintenance activity for any maintenance area determined to have a moderate to high potential for the occurrence of important historical resources. If such a potential exists, an IHA would be prepared to determine if significant historic resources could be affected, whether the impacts are covered in the PEIR, and identify required preservation or salvage actions from the MMRP.

Mitigation Measure 4.4.2 requires preparation of a phased research design and data recovery program (up to 15 percent sample) for any significant historical resources which may be impacted by maintenance, and summarized in a final results report.

Mitigation Measure 4.4.3 requires monitoring and implementation of historical protection or mitigation measures set forth in the IHA for specific maintenance activities.

PALEONTOLOGICAL RESOURCES (DIRECT)

Implementation of the following mitigation measure would reduce impacts to significant paleontological resources, which may be encountered in the course of maintenance activities, to below a level of significance.

Mitigation Measure 4.7.1 requires monitoring during maintenance activities where the potential exists for subsurface paleontological resources. The monitoring paleontologist shall have the authority to redirect maintenance away from any subsurface resources which are encountered to allow recovery of important scientific information associated with those resources. Draft and final reports shall be submitted to summarize the results of any recovery programs.

WATER QUALITY (DIRECT)

Implementation of the following mitigation measure would reduce impacts to significant water quality, which may be encountered in the course of maintenance activities, to below a level of significance.

Mitigation Measure 4.8.1 requires a qualified water quality specialist to prepare an Individual Water Quality Assessment (IWQA) for the IMP. Mitigation measures would be required to be incorporated into IMPs for specific pollutants when the existing levels of those pollutants exceed, or are within 25 percent of, standards established in the San Diego Basin Plan.

PUBLIC REVIEW:

The following individuals, organizations, and agencies received a copy or notice of the draft PEIR and were invited to comment on its accuracy and sufficiency:

Federal Agencies

U.S. EPA (19)

U.S. Border Patrol (22)

U. S. Fish and Wildlife Service (23)

U. S. Army Corps of Engineers (26)

Military

Naval Facilities Engineering Command, SW Division, Environmental Planning (12)

MCAS Miramar (13)

State of California

Departments

Department of Transportation, District 11 (31)

California Transportation Commission, Attention: Susan Bransen
1120 N Street, MS 52, Sacramento, CA 95814

Department of Fish and Game (32)

Toxic Substance Control (39)

Department of Parks and Recreation (40)

Water Resources (45)

State Clearinghouse (46A)

Agencies

Resources Agency (43)

Regional Water Quality Control Board, Region 9 (44)

California Environmental Protection Agency (37A)

Commissions/Boards

California Coastal Commission (47)

California Transportation Commission (51A)

Native American Heritage Commission (56)

Water Resources Control Board (55)

San Diego County

Department of Planning and Land Use (68)

Department of Parks and Recreation (69)

Department of Public Works (72)

Department of Environmental Health (75/76)

Air Pollution Control District (65)

City of San Diego

Office of the Mayor (91)

Council President Young, District 4 (MS 10A)

Councilmember Lightner, District 1 (MS 10A)

Councilmember Faulconer, District 2 (MS 10A)
Councilmember Gloria, District 3 (MS 10A)
Councilmember DeMaio, District 5 (MS 10A)
Councilmember Zapf, District 6 (MS 10A)
Councilmember Emerald, District 7 (MS 10A)
Councilmember Alvarez, District 8 (MS 10A)
City Attorney - Shannon Thomas (MS 59)

Departments

Development Services Department

LDR EAS – Myra Herrmann (MS 501)
LDR Floodplain – Julie Ballesteros (MS 501)
LDR Engineering - Don Weston (MS 501)
LDR Planning – Gary Geiler (MS 501)
Project Manager Patricia Grabski (MS 301)

City Planning & Community Investment

MSCP Reviewer – Kristen Forburger (MS 5A)
Facilities Financing – John Tracana (MS 606F)
Jeff Harkness (MS 5A)

Park and Recreation Department (89)

Laura Ball

Environmental Services Department (80)

Lisa Wood (MS 1102A)

Public Utilities Department

Nicole McGinnis (MS 906)
Keli Balo (MS 901)

Library Gov't Documents Department (81 & 81A)

Governmental Relations Department (MS 51M)

Real Estate Assets Department (85)

Engineering and Capital Projects Department (86)

Kerry Santoro, Project Officer II (MS 908A)

Storm Water Division (Applicant/Permittee)

Kris McFadden, Deputy Director
Gus Brown,
Anne Jarque, Senior Planner (MS 44)
Daniel Lottermoser, Associate Engineer (MS 44)
Drew Kleis (MS 1900)

City Agencies

Redevelopment Agency (MS 904)

Southeastern Economic Development Corporation (SEDC) (448)

Centre City Development Corporation (MS 51-D)

Housing Commission (MS 49N)

Advisory Boards

Historical Resources Board (87)

Community Forest Advisory Board (90)

Wetland Advisory Board (91A)

Advisory Committees

Mission Bay Park Committee (320)

Balboa Park Committee (MS 35)

Libraries (NOTICE ONLY)

Balboa Branch Library (81B)

Beckwourth Branch Library (81C)

Benjamin Branch Library (81D)

Carmel Mountain Ranch Branch (81E)

Carmel Valley Branch Library (81F)

City Heights/Weingart Branch Library (81G)

Clairemont Branch Library (81H)

College-Rolando Branch Library (81I)

Kensington-Normal Heights Branch Library (81K)

La Jolla/Riford branch Library (81L)

Linda Vista Branch Library (81M)

Logan Heights Branch Library (81N)

Malcolm X Library & Performing Arts Center (81O)

Mira Mesa Branch Library (81P)

Mission Hills Branch Library (81Q)

Mission Valley Branch Library (81R)

North Clairemont Branch Library (81S)

North Park Branch Library (81T)

Oak Park Branch Library (81U)

Ocean Beach Branch Library (81V)

Otay Mesa-Nestor Branch Library (81W)

Pacific Beach/Taylor Branch Library (81V)

Paradise Hills Branch Library (81Y)

Point Loma/Hervey Branch Library (81Z)

Rancho Bernardo Branch Library (81AA)

Rancho Peñasquitos Branch Library (81BB)

San Carlos Branch Library (81DD)

San Ysidro Branch Library (81EE)

Scripps Miramar Ranch Branch Library (81FF)

Serra Mesa Branch Library (81GG)

Skyline Hills Branch Library (81HH)

Tierrasanta Branch Library (81II)

University Community Branch Library (81JJ)

University Heights Branch Library (81KK)

Malcolm A. Love Library (457)

Other Cities

City of Chula Vista (94)

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Native Americans

Carmen Lucas (206)
Ron Christman (215)
Louie Guassac (215A)
Clint Linton (215B)
Kumeyaay Cultural Repatriation Committee (225)
Kumeyaay Cultural Heritage Preservation
Native American Bands and Groups (225A - Q) NOTICE ONLY

Other Agencies

San Diego Association of Governments (108)
Sempra (114)
Metropolitan Transit Systems (115)
Otay River Park Joint Powers Authority
5201 Ruffin Road, Suite P, San Diego, CA 92123
San Dieguito River Park Joint Power Authority (425A)
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Community Groups, Associations, Boards, Committees and Councils

Community Planners Committee (194)

Community Planning Groups

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Black Mountain Ranch –Subarea I (226C)
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Normal Heights Community Center (293)
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Fox Canyon Neighborhood Association (295)
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Hillside Protection Association (501)
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Friends of Rose Canyon (386)
San Dieguito Lagoon Committee (409)
San Dieguito River Park CAC (415)
Friends of San Dieguito River Valley (419)
San Dieguito River Valley Conservancy (421)
RVR PARC (423)
Beeler Canyon Conservancy (436)
Jim Dawe (445)
Mission Trails Regional Park (465)
San Diego Civic Solutions (*Canyonlands*)
Lee Sherwood, RECON Environmental
Bruce McIntyre, HELIX Environmental (Project Consultant)
Friends of Chollas Creek
Friends of Rice Canyon
Friends of Switzer Canyon
Los Peñasquitos Lagoon Foundation
San Diego Canyons Coalition

Other Groups and Interested Parties (continued)

Thirty-Second Street Canyon Task Force
Anne S. Fege
Billy Paul
Joseph Steinbach
Doug Wescott
Andrew Wilson
Karin Zirk
Bob Brown, San Diego State Foundation
Eric Elsen, San Diego State Foundation
Terri Ducey
Lee Peterson
George D. Navia
Willard & Georgia McNeil
Chikae Reed
Gloria Y. Randall
Kathleen O. Culkin
Francisco Javier Brenes
Randal Densley
Betty J. Kuske
Jeffrey A. Freedman
Mrs. Rosa A. Carbajal
Leonard Smith
Gloria Y. Randall
Mary Pfleeger
Dale McKasson
Rodel Reyes
Javier Cortez
Janet E. Wiggins
William A. Babcock
Joella A. Smith
Mr. Angel Sabino
William Hadaya
Robert Knarr
Doraine B. Offerman
Gene Gardiner
Fr. Henry Rodriguez, c/o St. Jude's Shrine
Shawn Curtis
Mike Hennessy
John McCormack
Shere Purifoy
Larry Stirling
Mary E. Williams
Barbara Washburn
Samuel J. Wilson III
Joan Conliff
Orlando Dona
Jerry Coates
Leslie Reynolds, Groundworks

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John Galbadon, Tijuana River Valley Equestrian Association

Dudek

URS

Mactec

Rick Engineering

Susan Wynn, Cooley LLP.

School Districts (NOTICE ONLY)

San Ysidro School District (127)

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Poway Unified School District (124)

South Bay Unified School District (130)

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MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM

DRAFT RECIRCULATED PROGRAM ENVIRONMENTAL IMPACT REPORT

SCH. No. 2004101032

PROJECT No. 42891

JUNE 2011

Prepared for:

City of San Diego
Transportation & Storm Water Department
Storm Water Division
2781 Caminito Chollas
San Diego, CA 92123

Master Storm Water System Maintenance Program Draft Recirculated Program Environmental Impact Report

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LIST OF ACRONYMS

The following list of acronyms used within this Program Environmental Impact Report is provided for the reader's reference.

ADD	Assistant Deputy Director
ADRP	Archaeological Data Recovery Program
AMSL	above mean sea level
APE	Area of Potential Effect
ARDDRP	Archaeological Research Design and Data Recovery Program
Basin Plan	Water Quality Control Plan for the San Diego Basin
BAT	best available technology economically achievable
BCH	beach
BCT	best conventional pollutant control technology
BI	Building Inspector
BMI	Benthic Macroinvertebrate
BMPs	Best Management Practices
BOD	biological oxygen demand
BS	broom baccharis scrub
CAM	cismontane alkali marsh
CBM	coastal brackish marsh
CDFG	California Department of Fish and Game
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CH ₄	methane
City	City of San Diego
CLOW	coast live oak woodland
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO ₂	carbon dioxide
COD	chemical oxygen demand
Corps	U.S. Army Corps of Engineers
CSCS	coastal sage-chaparral scrub
CSM	coastal saltmarsh
CSV	Consultant Site Visit Record
CWA	federal Clean Water Act
dB	decibel
dB(A)	A-weighting decibel
DCSS	Diegan coastal sage scrub
DEV	developed land
DH/RUD	disturbed habitat/ruderal
DSD	Development Services Department
DW	disturbed wetland
EAS	Environmental Analysis Section
ERM	Environmental Review Manager

LIST OF ACRONYMS (cont.)

ESL	Environmentally Sensitive Lands
EW	eucalyptus woodland
FWM	freshwater marsh
General Plan gpd	City of San Diego Progress Guide and General Plan gallons per day
HELIX	HELIX Environmental Planning, Inc.
HRG	City of San Diego's Historical Resources Guidelines
HU	Hydrologic Unit
HUD	U.S. Department of Housing and Urban Development
IBA	Individual Biological Assessment
IHA	Individual Historical Assessment
IHHA	Individual Hydrology and Hydraulic Assessment
IMP	Individual Maintenance Plan
INA	Individual Noise Assessment
IWQA	Individual Water Quality Assessment
JURMP	Jurisdictional Urban Runoff Management Plan
L _{dn}	artificial decibel increment added to quiet time noise levels in a 24-hour noise descriptor
L _{eq}	noise equivalent level
LCP	Local Coastal
LID	Low Impact Development Plan
LUP	Land Use Plan
MBTA	Migratory Bird Treaty Act
MC	Maintenance Contractor
MEP	maximum extent practicable
MFS	mule fat scrub
MHPA	Multi-Habitat Planning Area
MLD	Most Likely Descendent
MM	Maintenance Manager
MMC	Mitigation Monitoring Coordinator
MMRP	Mitigation Monitoring and Reporting Plan
MSCP	Multiple Species Conservation Program
MSWSMP	Master Storm Water System Maintenance Program
N ₂ O	nitrous oxide
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Planning
NFC	City natural flood channel
NHPA	National Historic Preservation Act

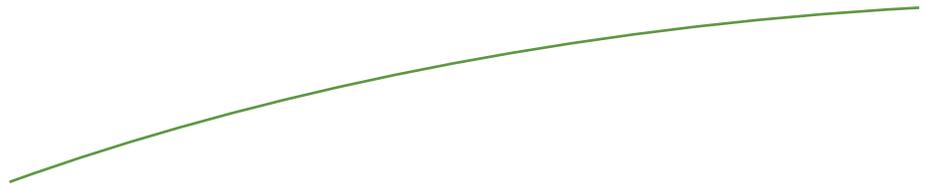
LIST OF ACRONYMS (cont.)

NNG	non-native grassland
NNV/ORN	non-native vegetation/ornamental
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
ODS	other drainage systems
PEIR	Program Environmental Impact Report
PI	Principal Investigator
Porter-Cologne Act	State Porter-Cologne Water Quality Act
PRC	Public Resources Code
RE	Resident Engineer
RS	riparian scrub
RSWFI	Routine Storm Water Facility Inspection
RURMP	Regional Urban Runoff Management Plan
RW	riparian woodland
RWQCB	Regional Water Quality Control Board
SCR	Substantial Conformance Review
SDP	Site Development Permit
SFD	southern foredunes
SMC	southern mixed chaparral
SNI	Service Notification Inspection
SOC	scrub oak chaparral
SPI	Storm Patrol Inspection
SRF	southern riparian forest
SRW	southern sycamore riparian woodland
STM/OW	streambed/open water
SUSMP	Standard Urban Storm Water Mitigation Plan
SWD	City of San Diego, Storm Water Division
SWPPP	Storm Water Pollution Prevention Plan
SWQCB	State Water Quality Control Board
SWRCB	State Water Resources Control Board
SWS	southern willow scrub
SWSAS	Storm Water Sampling and Analysis Strategy
T&SD	Transportation and Storm Water Department
TDS	total dissolved solids
TMDL	total maximum daily load
TSS	total suspended solids
URMP	Urban Runoff Management Plan
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WDR	Wastewater Discharge Regulations
WURMP	Watershed Urban Runoff Management Plan
WUS	Waters of the U.S.

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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

ES-1 INTRODUCTION

This summary provides a brief synopsis of the project description, the results of the environmental analysis and the project alternatives considered within this Recirculated Program Environmental Impact Report (PEIR). By necessity, this summary does not contain the extensive background and analysis found in the document. Therefore, the reader should review the entire document to fully understand the project and its environmental consequences.

This Recirculated Program Environmental Impact Report (PEIR) addresses the potential environmental effects of maintenance activities associated with the proposed Master Storm Water System Maintenance Program (Master Program). This document addresses modifications to the Master Program which were made subsequent to preparation of the Final PEIR (referred to as the “original” PEIR) for this project, dated March 17, 2010. This Recirculated PEIR also includes additional information that has become available since the public review of the original PEIR. Most notably, this Recirculated PEIR includes additional information on water quality effects which are derived from an analysis commissioned by the City after public review of the original PEIR. A more detailed discussion of these changes is contained in Section 3.5, History of the Project.

In light of the changes to the Master Plan and the additional water quality analysis, the City has modified the original PEIR and is recirculating it for an additional 45 days. Although not required by CEQA, the City has included the responses to the comments received during the public review of the original PEIR to make this information readily available during the review of the PEIR. These comments and corresponding responses are located in Appendix A.2 of the PEIR.

In accordance with Section 15088.5(f)(1), the City is requiring reviewers to submit new comments on the Recirculated PEIR. As the comments and associated responses to the original PEIR are included in Appendix A.2, the Final Recirculated PEIR will only include responses to comments submitted during the public review period for the Recirculated PEIR.

ES-2 PROJECT DESCRIPTION AND LOCATION

The subject of this PEIR is a long-term maintenance program proposed by the City of San Diego to assure that the municipal storm water system provides adequate flood control. To guide maintenance activities, the City has prepared a Master Storm Water System Maintenance Program (Master Program). The Master Program describes the maintenance techniques to be employed as well as the protocols to be followed to minimize the impact of maintenance activities with respect to environmental resources.

The primary objectives of the Master Program include:

- Fulfill the mandate of Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk;
- Develop a comprehensive program that will govern the future maintenance of the City's storm water system in an efficient, economic, environmentally and aesthetically acceptable manner for the protection of property and life in accordance with Council Policy 800-04;
- Ensure implementation of Best Management Practices (BMPs) and maintenance protocols during maintenance activities to avoid and/or minimize effects to environmental resources, and incorporate the analysis of the operational and pollution prevention benefits of each proposed project; and
- Create an integrated comprehensive review process for annual maintenance activities that will facilitate authorizations from local, state and federal regulatory agencies.

The City's storm water system is comprised of a number of different types of facilities designed to transport storm runoff through the metropolitan area. The storm water system includes a series of natural and man-made channels which are used within the City to convey storm water.

Maintenance of channels primarily involves the removal of vegetation and/or sediment to maximize conveyance of storm water. Vegetation causes flooding by slowing the velocity of floodwater while sediment diminishes the capacity of the facility to handle flow. In addition to restoring flood capacity, removal of sediment often has a positive impact on water quality by removing pollutants that have accumulated in the sediment (e.g. heavy metals and bacteria).

Vegetation and sediment are most frequently removed by mechanized equipment operating within the facility or from the banks. When access is unavailable to accommodate transport of equipment necessary to conduct maintenance, maintenance will be done using hand tools and removed by hand. Maintenance may occur as often as once a year depending on the accumulation of vegetation and/or sediment. In some cases, maintenance may only have to occur once during the permit period. Normally, maintenance on a specific segment would be completed with one to two weeks; for longer more difficult segments, maintenance may last up to two months.

The Master Program includes first, a process by which individual storm water facility maintenance would be identified and prioritized annually through an evaluation process that considers the costs and benefits of maintenance of each facility in meeting flood control and water quality service goals. On an annual basis, SWD will prepare an Annual Maintenance Assessment List to identify storm water facilities which may require maintenance. Based on further evaluation of those storm water facilities, including hydrology studies, the SWD will establish an Annual Maintenance Priority List for the coming year. Second, the Master Program includes a process by which annual storm water facility maintenance would be authorized through a process known as Substantial Conformance Review (SCR).

Under the SCR process, the City's Development Services Department (DSD) would evaluate the potential impacts associated with annual maintenance proposals and compare them with the impacts analyzed in the certified PEIR and with the objectives, standards, guidelines, and conditions for the Master Site Development Permit/Coastal Development Permit (SDP/CDP). If DSD determines that the proposed maintenance activities are in conformance with the approved Master SDP/CDP and certified PEIR; DSD may authorize approval of each individual maintenance proposal. The SCR process would utilize a comprehensive checklist included in the Master Program to confirm that the proposed maintenance is consistent with the Master Program and PEIR. The checklist includes an itemized list of the mitigation measures contained in the PEIR and maintenance protocols included in the Master Program. In completing the SCR checklist, the City will determine whether applicable measures and protocols have been included in the proposed maintenance.

As a part of the SCR process, the City would prepare Individual Maintenance Plans (IMPs) for each proposed maintenance activity. An Individual Hydrology/Hydraulic Assessment (IHHA) would be conducted to determine the minimum amount of vegetation and sediment removal needed to facilitate conveyance of floodwater. An Individual Water Quality Assessment (IWQA) would also be conducted to determine if maintenance could adversely impact water quality and define appropriate actions to mitigate potential impacts. The IMP would be based on the results of the corresponding IHHA and IWQA.

Based on the IMPs, site-specific assessments would also be performed to determine if these activities would impact sensitive biological or historical resources; these studies would be referred to as Individual Biological Assessments (IBAs) and Individual Historical Assessments (IHAs). Where potential impacts could occur, the associated IBA or IHA would describe the mitigation measures from the Mitigation Monitoring and Reporting Program (MMRP) to be implemented to minimize impacts.

If the City determines based on the IHHA, IBA, IHA, IWQA, and SCR checklist that the proposed maintenance activities are included in the Master Program, adequately addressed in the PEIR and include the maintenance protocols, PEIR mitigation measures and Best Management Practices (BMPs) required by the Master Program PEIR: the City may authorize the proposed annual maintenance activities. If a maintenance activity is determined not to be in substantial conformance, then a new or amended permit would be required.

On an annual basis, the IMPs, IHHAs, IWQAs, IBAs and IHAs would be submitted for authorization by state and federal agencies. Based on a review of this information, the state and federal agencies would decide whether to authorize the maintenance activities as proposed or with modifications.

At the end of the annual maintenance, an annual maintenance monitoring report would be submitted to designated City departments and state and federal agencies. This report would include a summary of the amount and type of biological or historical resources impacted and the mitigation measures that were implemented.

Implementation of the maintenance activities included in the Master Program would require a variety of discretionary actions. Due to the long-term nature of the Master Program, long-term (master) permits from the City as well as state and federal agencies are being sought to streamline the maintenance process. Long-term authorizations include a SDP (City of San Diego), CDP (City of San Diego), Section 404 Permit (U.S. Army Corps of Engineers [Corps]), Section 1605 Streambed Alteration Agreement (California Department of Fish and Game [CDFG]), and Section 401 Certification (California Regional Water Quality Control Board [RWQCB]). If surface discharges of water are involved, maintenance would require a Wastewater Discharge Permit from the RWQCB.

ES-3 SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION

The PEIR addresses the following major environmental issues: aesthetics/neighborhood character, air quality, greenhouse gas emissions (GHG), biological resources, historical resources, hydrology, land use, noise, paleontological resources, and water quality. The analyses and conclusions for each environmental issue are found in Subchapters 4.1 through 4.8. The environmental effects discussed in Chapter 4.0, Environmental Analysis, of the PEIR are summarized in Table ES-1, Impacts and Proposed Mitigation. In addition, Table ES-1 summarizes the mitigation measures identified in Chapter 4.0, Environmental Analysis that would reduce project impacts and indicates whether implementation of the mitigation measures would reduce impacts to below a level of significance. Direct impacts with respect to biological resources, historical resources, land use policy, paleontological resources, and water quality are considered significant but mitigable. Direct impacts with respect to air quality/GHG emissions, hydrology and noise are considered not significant. Cumulative impacts related to the following issues would be significant and unavoidable: aesthetics/neighborhood character, air quality/climate change, biological resources, historical resources, paleontological resources, solid waste, and water quality.

ES-4 ALTERNATIVES

Based on the requirement that alternatives meet most of the basic objectives of the proposed project and reduce significant impacts associated with the proposed project, this EIR analyzes the following alternatives which would reduce the need for regular maintenance of storm water facilities.

- No Project: No Maintenance;
- No Project: Maintenance Pursuant to Separate Permits;
- Raising the channel banks by constructing walls or berms along the top of the channels;
- Diverting storm water in pipes around constrained segments;
- Widening channels to accommodate vegetation; and/or
- Off-site Runoff Reduction.

Alternative locations are not considered given the nature of the proposed project. Proposed maintenance activities must occur within the channel segments included in the Master Program in order to achieve the primary goal of protecting life and property from flooding. Conducting

maintenance activities in other locations would not achieve this goal and would result in continued flooding of adjacent property.

Table ES-2, Comparison of Environmental Effects of the Proposed Project with Project Alternatives, summarizes the direct and cumulative environmental effects of the project in comparison with the alternatives. These alternatives are summarized below. As illustrated in Table ES-2, the No Project: No Maintenance Alternative would be the environmentally-preferred alternative because it would eliminate all impacts associated with the proposed project. The Off-site Runoff Reduction Alternative would be the next environmentally preferred alternative but it is considered infeasible, as discussed below.

No Project: No Maintenance Alternative

Under this alternative, the City would not conduct any maintenance activities within the storm water system. Vegetation would grow unchecked within the facilities and sediment would not be removed.

Although this alternative would avoid all impacts of the proposed project, the City rejected the alternative because it would not fulfill the basic objective to protect life and property from flooding, as mandated by Section 26.1 of the San Diego City Charter. The overgrowth within the storm water facilities that would occur from lack of regular maintenance would impede flood waters and cause flooding.

No Project: Maintenance With Separate Permits Alternative

Under this alternative, storm water maintenance would occur pursuant to separate permits issued for individual maintenance projects, as it has been historically done in the City. In addition, a Master Program would not be adopted to guide future maintenance activities. Thus, no comprehensive maintenance protocols and individual technical assessments would be performed prior to maintenance.

This alternative would not result in a reduction of environmental maintenance because maintenance would still be performed. Other potential impacts related to aesthetics/neighborhood character, historical resources, land use policy, solid waste and water quality would be comparable to the proposed project.

Maintenance with separate permits was rejected because it would not provide the comprehensive approach to maintenance which characterizes the proposed Master Program. The CDFG, RWQCB and Corps have all expressed concern about the way the City has conducted storm water maintenance in the past. Historically, the City has conducted maintenance under separate Streambed Alteration Agreements and Section 404 Permits. As a result, mitigation has been on a case by case basis. These agencies have also objected to the fact that separate permits do not allow consideration of cumulative effects of maintenance activities or the creation of larger more viable mitigation areas.

Raised Bank Alternative

Under this alternative, structures (e.g. levees or walls) would be added along the top of channels to allow them to contain vegetation without compromising their ability to convey flood waters. The structures would offset the effect of vegetation and sediment by allowing water elevations to increase without spilling out into adjacent developed areas. However, accumulation of sediment and vegetation would ultimately eliminate the increased flood capacity created by the structures. Channel-specific engineering would be undertaken to determine the additional “bank” height needed.

Although this alternative would potentially impact less wetlands, allow natural removal of urban pollutants to continue and generate less solid waste, the City rejected the alternative for factors related to impacts to wildlife habitat, cost, visual quality, public safety, and the temporary nature of the solution. With respect to wildlife habitat, the structures along storm water facilities would have an adverse impact on wildlife by making it more difficult for upland wildlife to access the channels for water, food and cover. Walling off the storm water facilities would also have an adverse visual impact. With respect to public safety, allowing the channels to fill with sediment could block side drains that empty into the channels which could cause water to back up and flood adjacent public and/or private properties. This accumulation of sediment would likely eventually offset the additional capacity created by the structures.

With respect to financial feasibility, the cost of designing and constructing structures along existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to construct the structures. Given the number of miles of drainage channels within the City, the cost of increasing flood capacity by constructing walls or levees is considered infeasible. Funding would be required to design and construct these structures. Council Policy 800-04 (Drainage Facilities) states that all projects with significant or total funding by the City shall be specifically identified and scheduled in the Capital Improvement Program (CIP). Council Policy 800-14 (Prioritizing CIP Projects) outlines the prioritization and funding policy for which projects compete. The prioritization process allows for the analytical comparison of the costs and benefits of individual project as well as providing an opportunity to evaluate projects against one another on their relative merits. This alternative would, therefore, compete with other CIP projects for funding and implementation. Construction could be delayed indefinitely until funding is available while the need to maintain facilities would still exist. Also, due to the uncertainty associated with the ultimate approval of these structures as a CIP project, this alternative is considered infeasible.

Channel By-pass Alternative

This alternative would involve construction of underground pipes that would divert some or all of the runoff around a channel segment to allow the channel to be naturally vegetated. Channel-specific engineering would be undertaken to determine the location and sizing of by-pass pipes to assure that vegetated channel segments can continue to support vegetation without resulting in flooding.

Although this alternative would be the next environmentally-preferred alternative (after the No Maintenance Alternative) because it could potentially result in reduced impacts related to wetlands, water quality and solid waste disposal, the City rejected the alternative as financially infeasible. As with the Raised Bank Alternative, the cost of constructing the by-pass pipes would be high. Beyond the cost of acquiring easements, adjacent development would make it difficult to construct by-pass pipes without impacting structures including homes and businesses. Condemning structures would further add to the cost of the by-pass alternative. As discussed with the Raised Bank Alternative, pursuant to Council Policy 800-14, this alternative would compete with other CIP projects for funding and implementation. Construction could, therefore, be delayed indefinitely until funding is available, or never occur because the by-pass structures would not be approved as a CIP project.

In addition, this alternative would not be effective in the long-term because accumulation of sediment in the main channel would likely eventually offset the additional capacity created by the by pass. Given these cost factors, accommodating flood waters with by-pass pipes is considered infeasible. Lastly, by-pass pipes could physically impact or burden adjacent property owners related to construction of pipelines and/or easement acquisition.

Widened Channel Alternative

Under this alternative, the configuration of channels would be modified to increase the volume capacity of the channel. The goal of increasing the channel volume would be to enable vegetation to exist in the channel without causing flooding. Channel-specific hydraulic analysis would be undertaken to determine the additional width needed. In most cases, the capacity would likely be increased by widening the cross-section of the channel. Increasing the depth of the channel would also increase capacity but is expected to be difficult to achieve in most cases due to constraints imposed by the slope limitations on the channel banks and maintaining downstream gradients.

Allowing vegetation to remain in the widened channels would reduce the impact of maintenance on water quality and solid waste. The vegetation remaining within the channels would allow the natural process of urban pollutant control to continue. This alternative would also reduce the long-term impact on solid waste disposal. Although the initial widening effort would generate plant material requiring offsite disposal, subsequent clearing and related disposal would be reduced in the long-term.

Although this alternative would allow vegetation to remain over some portion of the widened channels without periodic maintenance, the initial widening would impact the same amount of vegetation as the full maintenance approach. However, since a portion of the vegetation within a widened channel would be allowed to remain during future maintenance, the long-term impact of maintenance on wetland habitat would be reduced. Also, as with the proposed project, the actions within channels would not result in the permanent loss of the channels themselves.

The City considers this to be an infeasible alternative to the proposed Master Plan for social and economic reasons. With respect to economic feasibility, the cost of designing and widening existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to accommodate widening. As discussed with the Raised Bank

Alternative, pursuant to Council Policy 800-14, this alternative would compete with other CIP projects for funding and implementation. Construction could, therefore, be delayed indefinitely until funding is available, or never occur because the widening would not be approved as a CIP project. With respect to social issues, as with the other alternatives, widening of the channels would impact adjacent homes as businesses through the loss of property and/or the need to complete relocation.

Off-site Runoff Reduction Alternative

The Off-site Runoff Reduction Alternative would involve implementing low impact development (LID) Best Management Practices and Integrated Management Practices (BMPs/IMPs) within the affected watersheds to substantially reduce associated runoff generation and flows into storm water facilities included in the Master Program. The use of LID BMPs/IMPs could involve: (1) reducing impervious surfaces through the use of vegetation or permeable pavement, and reducing impervious surfaces and compaction in landscaped and open space areas; (2) directing runoff into pervious areas (e.g., landscaping); (3) directing runoff into engineered IMP sites (e.g., bio-retention facilities, planter boxes, cisterns or infiltration facilities); and/or (4) creating self-contained/self-treating drainage management areas such as green roofs or basins.

This alternative would, by nature, be implemented in areas outside the storm water facilities. The Off-site Runoff Reduction Alternative would target retrofitting LID BMPs/IMPs in applicable existing developed areas because sites with new development are already subject to storm water standards requiring the use of LID BMPs/IMPs.

To the extent this alternative would be able to minimize or eliminate the need for removing vegetation and sediment to improve floodwater conveyance, this alternative would reduce impacts of the proposed Master Program related to aesthetics/neighborhood character, biological resources, cultural resources and water quality. Cumulative aesthetic/neighborhood character impacts would be lessened by reducing the number of trees that require removal to improve conveyance of flood water. Similarly, the ability to leave wetland vegetation within the storm water facilities, due to reductions in storm runoff, would proportionately reduce impacts to biological resources related to the proposed Master Program. Lastly, the LID BMPs/IMPs would reduce the urban pollutants reaching the storm water facilities, and minimize the impacts of storm water facility maintenance on the ability of the storm water facilities to remove water-born pollutants.

Although the Off-site Runoff Reduction Alternative could potentially result in fewer impacts to aesthetic/neighborhood character and biological resources, it was rejected by the City as financially infeasible and posing a burden on adjacent property owners. The cost of constructing and maintaining adequate LID BMPs/IMPs to generate a meaningful reduction in runoff, while unknown, would likely be high due to the anticipated extensive nature of BMPs/IMPs that would be required. In addition to construction and long-term maintenance costs, the City would incur additional costs related to acquiring private property/easements for the placement of BMPs/IMPs. In addition to cost and acquisition issues, the timing associated with a substantial reduction of off-site surface water generation is problematic. Although future development projects are required to incorporate LID concepts, the rate at which this occurs is likely to be

extremely protracted, given today's economic conditions. Thus, it may take decades for enough new development to incorporate LID concepts to result in a substantial reduction in storm water runoff and the associated maintenance activities. Based on these considerations, the Off-site Runoff Reduction Alternative is considered infeasible as a stand-alone alternative to the proposed Master Program.

ES-5 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

As described in Subchapter 3.5, a number of concerns were expressed by the public during the public review period for the original Draft PEIR. These concerns were primarily related to water quality impacts of maintenance, the need for more information regarding hydrologic and hydraulic conditions within individual segments, maintenance proposed within open space, and the need to consider other alternatives to the proposed maintenance. Although this Recirculated Draft PEIR includes additional information related to each of these areas, it is anticipated that members of the public may still have concerns in these areas.

Although the Master Program has been amended to require hydrology and hydraulic studies be completed for each of the individual storm water facilities at the time maintenance is proposed, some of the members of the public are expected to insist that hydrology and hydraulic studies be completed for all of the storm water facilities before adoption of the Master Program. In addition, members of the public are expected to insist that detailed maintenance plans be identified prior to approval of the Master Program and PEIR to assure that the impacts are adequately anticipated.

In response to concerns expressed regarding maintenance in open space, the City's Storm Water Division (SWD) removed many of the storm water facilities within open space where maintenance was not likely to be required. As a result, the number of miles of storm water facilities included in the Master Program was reduced from 50 to 32 miles. In addition, SWD has determined that the estimates of disturbance width in the original PEIR was over conservative. With the reduction in the number of storm water facilities combined with the reduced disturbance width assumptions, the impact to wetlands within the City's jurisdiction would be reduced by approximately 43 percent (30 acres) when compared to the original Master Program. Nevertheless, some members of the public are expected to request further reductions in the number of facilities to be maintained under the Master Program.

Concerns are likely to continue to be expressed regarding alternatives to the proposed maintenance. Although the City's DSD staff believe that a reasonable range of alternatives is presented in this PEIR, members of the public are expected to contend that other alternatives exist to the proposed project.

Water quality is also expected to continue to be a concern of the public. Although the water quality discussion has been expanded in the PEIR, members of the public are expected to take the position that the water quality impacts are understated and that additional mitigation should be proposed.

In addition, the public has expressed a desire to have more involvement in reviewing annual maintenance proposals which are required as part of the Master Program. In meeting with these individuals and groups, the City has cited specific CEQA statutes and guidelines and San Diego

Municipal Code regulations to support their determination that annual maintenance activities that are explicitly identified in the Master Program and adequately addressed in the Final PEIR can be approved in reliance upon the certified Final PEIR. As described in Subchapter 1.6 of this PEIR, pursuant to Section 15168(c) of the CEQA Guidelines, the certified Final PEIR would satisfy CEQA requirements for subsequent maintenance activities if no new effects could occur, no new mitigation measures would be required, and all feasible mitigation measures or alternatives identified in the PEIR will be implemented. Despite the legal grounds for maintaining that no new environmental document is required for annual maintenance plans covered within the scope of the Master Program and adequately described by the PEIR, members of the public are expected to push for such review regardless of the provisions of CEQA.

Table ES-1 IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
AESTHETICS/NEIGHBORHOOD CHARACTER (Cumulative)		
Removal of vegetation, including mature trees along natural drainage courses, would diminish aesthetic/neighborhood character.	No mitigation measures are available to overcome the aesthetic/neighborhood character impacts of storm water facility maintenance when combined with other development within the City of San Diego.	Significant (Cumulative)
AIR QUALITY (Cumulative)		
Criteria pollutants released by equipment associated with maintenance would contribute to air pollution already occurring with the San Diego Air Basin.	No project-specific mitigation measures are available to overcome the contribution of criteria pollutants from maintenance on the San Diego Air Basin.	Significant (Cumulative)
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative)		
Loss of significant vegetation communities consisting of up to 41.62 acres of wetland vegetation ranging from mature southern willow scrub to freshwater marsh; 37.08 acres of unvegetated channel bottom; and 4.9 acres of sensitive upland vegetation communities including Diegan coastal sage scrub, southern mixed chaparral and non-native grassland.	<p>Mitigation Measure 4.3.1 requires an IBA be prepared based on the IMP prior to commencing maintenance to quantify the impacts to biological resources and identify required mitigation from the MMRP, prior to commencing maintenance.</p> <p>Mitigation Measure 4.3.2 prohibits initiation of maintenance activities before the City’s Assistant Deputy Director (ADD) Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IBAs including required mitigation for each of the proposed activities.</p> <p>Mitigation Measure 4.3.3 prohibits any maintenance activities until the City’s ADD Environmental Designee and Mitigation Monitoring Coordinator (MMC) have approved the qualifications of the biologists who will monitor maintenance activities which may impact sensitive biological resources.</p>	Not Significant (Direct), Significant (Cumulative)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative) (cont.)		
	<p><i>Mitigation Measure 4.3.4</i> requires creation of a mitigation account to ensure sufficient funds to implement all biological mitigation required for the proposed maintenance activities.</p> <p><i>Mitigation Measure 4.3.5</i> requires evidence of compliance with other permitting authorities, if applicable, before maintenance begins.</p> <p><i>Mitigation Measure 4.3.6</i> requires a pre-maintenance meeting be held with the maintenance workers and the monitoring biologist to review mitigation measures included in the IBA.</p> <p><i>Mitigation Measure 4.3.7</i> requires the monitoring biologist to submit a letter report within three months of the end of maintenance describing the monitoring activities and any remedial measures taken to mitigate biological impacts associated with each maintenance activity. Within 90 days of receiving comments on the draft monitoring report, one copy of the final monitoring report shall be submitted to the MMC.</p> <p><i>Mitigation Measure 4.3.8</i> requires the monitoring biologist to submit an annual summary of the monitoring activities and any remedial measures taken to minimize biological impacts within six months of the end of the annual storm water facility maintenance program.</p> <p><i>Mitigation Measure 4.3.9</i> requires mitigation for wetland impacts to occur within the same watershed as the impact,</p>	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative) (cont.)		
	<p>unless no suitable location exists within the watershed. Mitigation sites are chosen based on best mitigation value. In addition, mitigation plans must be prepared prior to any maintenance activity that could impact significant biological resources. These plans must identify success criteria and include a maintenance and monitoring program to assure that the success criteria are met. Mitigation will be accomplished through one or a combination of the following methods: enhancement, restoration, creation, or mitigation credit acquisition. Specific mitigation ratios must be in accordance with Table 4.3-10 of PEIR.</p> <p>Mitigation Measure 4.3.10: requires a wetland mitigation plan be prepared in accordance with the Conceptual Wetland Restoration Plan contained in Appendix H of the Biological Technical Report, included as Appendix D.3 of the PEIR.</p> <p>Mitigation Measure 4.3.11 requires impacts to upland vegetation be compensated through payment into the City’s Habitat Acquisition Fund, habitat preservation, or purchase of suitable mitigation credits. Specific mitigation ratios must be in accordance with Table 4.3-11 of the PEIR. The upland mitigation must occur within six months of the date the related maintenance has been completed.</p>	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative) (cont.)		
	<p><i>Mitigation Measure 4.3.13</i> requires the monitoring biologist to confirm that mitigation actions (e.g., sensitive resource fencing, noise attenuation measures and equipment setbacks) have been adequately implemented before maintenance begins and monitor maintenance activities, when required.</p> <p><i>Mitigation Measure 4.3.14:</i> requires the City to conduct an environmental review of the proposed mitigation plan in accordance with CEQA and implement any mitigation measures needed to reduce impacts on biological resources resulting from offsite mitigation.</p>	
Loss of habitat for sensitive birds including the coastal California gnatcatchers, least Bell’s vireo, or raptors.	<i>Mitigation 4.3.12</i> requires impacted, occupied coastal California gnatcatcher habitat be compensated through acquisition of suitable habitat or mitigation credits at a ratio of 1:1. The mitigation must take place within the MHPA and must be accomplished within six months of the date maintenance is completed.	Not Significant (Direct), Significant (Cumulative)
Loss of habitat for sensitive fish species.	<i>Mitigation Measure 4.3.23</i> requires avoidance or minimization measures when maintenance activities occur at known localities for listed fish species or within suitable habitat for other highly sensitive aquatic species (i.e., southwestern pond turtle).	Not Significant (Direct), Significant (Cumulative)
Loss of sensitive plant species with potential to occur.	<i>Mitigation Measure 4.3.13</i> requires delineation and fencing of areas supporting listed and/or narrow endemic plants which can be avoided during maintenance.	Not Significant (Direct), Significant (Cumulative)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative) (cont.)		
	<p><i>Mitigation Measure 4.3.15</i> requires impacts to listed or endemic sensitive plant species to be offset through implementation of one or combination of: salvage and relocation; seed collection and replanting off site; and/or preservation of offsite populations.</p> <p><i>Mitigation Measure 4.3.24</i> requires the boundaries of listed and/or narrow endemic plants, to be clearly delineated with flagging or temporary fencing that must remain in place for the duration of the activity.</p>	
Loss of vegetation could increase downstream urban pollutants due to the loss of natural removal through root systems of in-channel vegetation.	Implementation of Mitigation Measures 4.8.1 through 4.8.3 would require implementation of mitigation measures, protocols and/or BMPs to reduce the transport of sediment and urban pollutants into downstream habitat areas.	Not Significant (Indirect), Significant (Cumulative)
Disruption of breeding activities of sensitive birds including the coastal California gnatcatchers, least Bell's vireo, or raptors.	<p><i>Mitigation Measure 4.3.16</i> requires specific distance setbacks for maintenance activities from habitat and/or nests associated with sensitive animals.</p> <p><i>Mitigation Measure 4.3.17</i> restricts clearing, grubbing, or grading during the breeding season of sensitive bird species.</p> <p><i>Mitigation Measure 4.3.18</i> requires that a qualified biologist submit evidence to the ADD and any applicable resource agency which demonstrates whether or not sensitive breeding birds could be present, triggering the requirement for implementation of mitigation measure 4.3-20.</p> <p><i>Mitigation Measure 4.3.19</i> requires the presence of sensitive birds be assumed if suitable habitat may be affected by maintenance noise but specific surveys are not conducted. In this event, the City would comply with</p>	Not Significant (Indirect), Significant (Cumulative)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
BIOLOGICAL RESOURCES (Direct, Indirect and Cumulative) (cont.)		
	<p>Mitigation Measure 4.3-20. Mitigation Measure 4.3.20 specifies that, if no surveys are completed and no sound attenuation devices are installed, maintenance activities that would generate more than 60dB(A) L_{eq} within the habitat requiring protection shall cease for the duration of the breeding season of the appropriate species and a qualified biologist shall establish a limit of work.</p> <p>Mitigation Measure 4.3.21 requires a pre-maintenance survey for raptor nests if maintenance occurs during the raptor breeding season (January 15 to August 31). If active raptor nests are found, maintenance is prohibited within distances which are specific to the affected raptor until any fledglings have left the nest.</p> <p>Mitigation Measure 4.3.22 requires trees and/or grasslands supporting active raptor nests not be removed until after the breeding season or until the young have fledged.</p> <p>Mitigation Measure 4.3.25 precludes maintenance within or adjacent to avian nesting habitat during breeding season (January 15 to August 31) unless postponing maintenance would result in a threat to human life or property.</p> <p>Implementation of Mitigation Measures 4.1-2 through 4.1-8 would also reduce indirect impacts to sensitive birds.</p>	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
GHG Emissions (Cumulative)		
GHG emissions released by equipment in the course of maintenance would combine with GHG emission from other sources in the San Diego Air Basin.	No project-specific mitigation measures are available to overcome the contribution of GHG emissions from maintenance on the San Diego Air Basin and global climate.	Significant (Cumulative)
HISTORICAL RESOURCES (Direct and Cumulative)		
Potential loss of unknown historical resources and previously identified historical resources.	<p>Mitigation Measure 4.4.1 requires an Individual Historical Assessment (IHA) prior to any maintenance activity for any maintenance area determined to have a moderate to high potential for the occurrence of important historical resources. If such a potential exists, an IHA would be prepared to determine if significant historic resources could be affected, whether the impacts are covered in the PEIR, and identify required preservation or data recovery pursuant to the MMRP.</p> <p>Mitigation Measure 4.4.2 requires preparation of a phased research design and data recovery program (up to 15 percent sample) for any significant historical resources which may be impacted by maintenance, and summarized in a final results report.</p> <p>Mitigation Measure 4.4.3 requires monitoring and implementation of historical protection or mitigation measures set forth in the IHA for specific maintenance activities.</p>	Not Significant (Direct), Significant (Cumulative)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
LAND USE (Direct)		
Impacts to MSCP-protected species	<p>Mitigation Measure 4.1.1 requires verification that all MHPA boundaries and limits of work have been delineated on all maintenance documents.</p> <p>Mitigation Measure 4.1.2 requires a qualified biologist to survey areas suspected to serve as habitat (based on historical records or site conditions) for sensitive birds covered by the MSCP.</p> <p>Mitigation Measure 4.1.3 requires, if a listed species is located within 500 feet of a proposed maintenance activity and maintenance would occur during the associated breeding season, an analysis of the noise generated by maintenance activities to identify the location of the 60 dB(A) L_{eq} noise contour and identify measures to be undertaken during maintenance to reduce noise levels.</p> <p>Mitigation Measure 4.1.4 requires the Project Biologist to determine if maintenance has the potential to impact breeding activities of listed species. If impacts could occur, maintenance, maintenance would be restricted during the breeding season unless maintenance is required to protect life and property.</p>	Not Significant (Direct)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
LAND USE (Direct) (cont.)		
	<p><i>Mitigation Measure 4.1.5</i> requires, if maintenance cannot be avoided during the breeding season for a listed bird, monitoring the nearby breeding bird activities by a qualified acoustician and biologist to determine the effectiveness of noise attenuation measures. If the noise attenuation is determined to be inadequate, the associated maintenance activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season of the subject species.</p> <p><i>Mitigation Measure 4.1.6</i> requires a pre-maintenance meeting where the Project Biologist to discuss the sensitive nature of the adjacent habitat with the crew and subcontractor. The area of maintenance would be clearly delineated before the meeting.</p> <p><i>Mitigation Measure 4.1.7</i> requires maintenance plans be designed to avoid the use of invasive plants, control lighting, and manage trash.</p> <p><i>Mitigation Measure 4.1.8</i> requires the MHPA boundaries and measures to protect coastal California gnatcatchers be shown on the maintenance plans.</p>	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
LAND USE (Direct) (cont.)		
Potential loss of significant unknown historical resources and previously identified historical resources.	Implementation of historical mitigation would reduce the regional impact by preserving and/or mitigating significant historical resources impacted by maintenance in accordance with the Historical Resources Guidelines.	Not Significant (Direct)
PALEONTOLOGICAL RESOURCES (Direct and Cumulative)		
Potential impacts to fossil-bearing geologic formations through constructing new or reconstructing existing access roads.	<i>Mitigation Measure 4.7.1</i> would require monitoring during maintenance activities where the potential exists for subsurface paleontological resources. The monitoring paleontologist shall have the authority to redirect maintenance away from any subsurface resources which are encountered to allow recovery of important scientific information associated with those resources. Draft and final reports shall be submitted to summarize the results of any recovery programs.	Not Significant (Direct), Significant (Cumulative)
SOLID WASTE DISPOSAL (Cumulative)		
Diminished landfill capacity resulting from disposal of dredge spoil, vegetation and rubbish produced by maintenance activities.	Although the Master Program contains specific maintenance protocols aimed at reducing the amount of material transported to local landfills, the City cannot assure that the majority of this material would be recycled and/or reused.	Significant (Cumulative)

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
IMPACT	MITIGATION MEASURES	ANALYSIS OF SIGNIFICANCE AFTER MITIGATION
WATER QUALITY (Direct and Cumulative)		
Clearing vegetation could substantially reduce the removal of urban runoff pollutants that occurs in earthen channels from infiltration, sedimentation and root absorption.	<p>Mitigation Measure 4.8.1 requires a qualified water quality specialist to prepare an Individual Water Quality Assessment (IWQA) for the IMP. Mitigation measures would be required to be incorporated into IMPs for specific pollutants when the existing levels of those pollutants exceed, or are within 25 percent of, standards established in the San Diego Basin Plan.</p> <p>Mitigation Measure 4.8.2 prohibits maintenance activities before the ADD Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IWQAs as well as confirming that mitigation measures, BMPs and protocols have been incorporated into the IMP, as appropriate.</p> <p>Mitigation Measure 4.8.3 requires a pre-maintenance meeting whenever the IHHA indicates significant water quality impacts may occur. At this meeting, the water quality specialist will identify and discuss Table 4.8-8 required mitigation measures, protocols and BMPs that must be carried out during maintenance.</p>	Not Significant (Direct), Significant (Cumulative)

**Table ES-2
 COMPARISON OF ENVIRONMENTAL EFFECTS OF THE
 PROPOSED PROJECT WITH PROJECT ALTERNATIVES
 (Direct/Cumulative)**

Environmental Subject	Environmental Issue	Proposed Project	No Project: No Maintenance	No Project: Maintenance With Separate Permits	Raised Bank	Channel By-pass	Widened Channel	Reduced Offsite Runoff
Aesthetics/ Neighborhood Character	Substantially alter the visual character	NS/SNM	NS/NS	NS/SNM	SNM- /SNM-	NS/NS	SM-/NS	NS/NS
	Substantial loss of mature stand of trees	NS/SNM	NS/NS	NS/SNM	NS- /SNM-	NS/NS	SM-/NS	NS/NS
Air Quality	Substantial increase in criteria pollutants	NS/SNM	NS/NS	NS/SNM	NS/ SNM=	NS/ SNM=	NS/ SNM=	NS/NS
	Substantial increase in greenhouse gas emissions	NS/SNM	NS/NS	NS/SNM	NS/ SNM=	NS/ SNM=	NS/ SNM=	NS/NS
Biological Resources	Substantial impact to sensitive habitat	SM/SNM	NS/NS	SM/SNM	SM- /SNM-	SM/ SNM-	SM-/NS	SM-/NS
	Substantial reduction in diversity or number of sensitive plant or animals	SM/SNM	NS/NS	SM/SNM	SM- /SNM-	SM- /SNM-	SM-/NS	SM-/NS
	Substantial interference with wildlife movement	NS/SNM	NS/NS	NS/SNM	NS/ SNM-	NS/ SNM-	NS/NS	SM-/NS
	Substantially conflict with ESL, MSCP or other approved habitat conservation plan	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	SM/NS

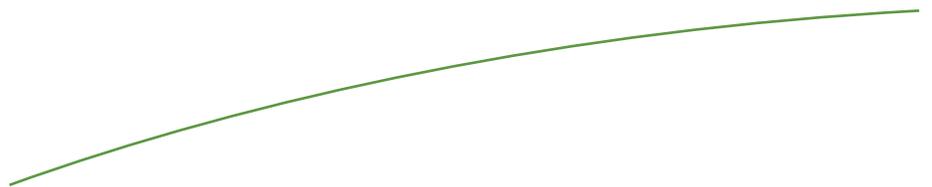
Table ES-2 (cont.) COMPARISON OF ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT WITH PROJECT ALTERNATIVES (Direct/Cumulative)								
Environmental Subject	Environmental Issue	Proposed Project	No Project: No Maintenance	No Project: Maintenance With Separate Permits	Raised Bank	Channel By-pass	Widened Channel	Reduced Offsite Runoff
Historical Resources	Substantial impact on historical resources	SM/SNM	NS/NS	SM/SNM	SM+/SNM+	SM+/SNM+	SM+/SNM+	NS/NS
	Substantial impact on resources of Native American value	SM/SNM	NS/NS	SM/SNM	SM+/SNM+	SM+/SNM+	SM+/SNM+	NS/NS
Hydrology	Substantial increase in impervious surfaces or a substantial alteration of on and offsite drainage patterns	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
Land Use	Consistency with Environmental Policy Goals and Objectives	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	SM/NS	NS/NS
	Consistency with City regional or environmental plans	SM/NS	NS/NS	SM/NS	SM-/NS	NS/NS	SM-/NS	NS/NS
	Consistency with other agency regional or environmental plans	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
	Compatibility with adjacent land use	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	SNM/NS	SM/NS

Table ES-2 (cont.) COMPARISON OF ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT WITH PROJECT ALTERNATIVES (Direct/Cumulative)								
Environ- mental Subject	Environ- mental Issue	Proposed Project	No Project: No Mainten- -ance	No Project: Mainten- ance With Separate Permits	Raised Bank	Channel By-pass	Widened Channel	Reduced Offsite Runoff
Noise	Create noise levels that would exceed the City's Municipal Code	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS	NS/NS
Paleontolo- gical Resources	Substantial impact on paleontologic- al resources	SM/ SNM	NS/NS	SM/SNM	SM+/ SNM+	SM+/ SNM+	SM+/ SNM+	NS/NS
Solid Waste Disposal	Substantial impact to landfill capacity	NS/SNM	NS/NS	NS/SNM	NS/ SNM-	NS/ SNM-	NS/ SNM-	NS/NS
Water Quality	Substantial increase in pollutant discharges, during or following maintenance, to receiving waters	SM/SNM	NS/NS	SM/SNM	NS/NS	NS/NS	SM- /SNM-	NS/NS

- NS: Not significant
 SM: Significant but mitigable
 SNM: Significant and not mitigable
 -: Impact severity reduced relative to the proposed project
 +: Impact severity increased relative to the proposed project
 =: Impact severity the same as the proposed project



Chapter 1.0
INTRODUCTION



CHAPTER 1.0 – INTRODUCTION

This Recirculated Program Environmental Impact Report (PEIR) addresses the potential environmental effects of maintenance activities associated with the proposed Master Storm Water System Maintenance Program (Master Program). This document addresses modifications to the Master Program which were made subsequent to preparation of the Final PEIR (referred to as the “original” PEIR) for this project, dated March 17, 2010. This Recirculated PEIR also includes additional information that has become available since the public review of the original PEIR. Most notably, this Recirculated PEIR includes additional information on water quality effects which are derived from an analysis commissioned by the City after public review of the original PEIR. A more detailed discussion of these changes is contained in Section 3.5, History of the Project.

Section 15088.5(a) of the CEQA Guidelines requires an EIR be recirculated for an additional public review when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review, but before certification. Information, resulting in the need to recirculate an EIR can include changes in the project or environmental setting as well as additional data or other information.

Subsequent to the completion of the public review for the original PEIR, the City modified the Master Program in response to comments received during public review of the original PEIR. As discussed in Section 3.5, History of the Project, the City has eliminated many of the storm water facilities located in open space that were included in the original Master Program. As a result, the number of miles of storm water facilities in the current Master Program has been reduced from approximately 50 to 32 miles. The revised Master Program is included in Appendix B of this PEIR. In addition, the City directed a specialist in the field of water quality (Weston Solutions) to conduct a more detailed analysis of the potential effects of storm water maintenance on water quality to respond to concerns expressed during the public review period for the original PEIR. This water quality analysis is included in Appendix F of this SPEIR.

In light of the changes to the Master Plan and the additional water quality analysis, the City has modified the original PEIR and is recirculating it for an additional 45 days. Although not required by CEQA, the City has included the responses to the comments received during the public review of the original PEIR to make this information readily available during the review of the PEIR. These comments and corresponding responses are located in Appendix A.2 of the PEIR.

In accordance with Section 15088.5(f)(1), the City is requiring reviewers to submit new comments on the Recirculated PEIR. As the comments and associated responses to the original PEIR are included in Appendix A.2, the Final Recirculated PEIR will only include responses to comments submitted during the public review period for the Recirculated PEIR.

As the City would be responsible for approving the Master Program, the City is acting as the Lead Agency in accordance with Section 15050(a) of the California Environmental Quality Act (CEQA) Guidelines. The City’s Storm Water Division (SWD) would be responsible for carrying out subsequent maintenance activities pursuant to the Master Program.

1.1 THE PROPOSED PROJECT

The primary objectives of the Master Program include:

- Fulfill the mandate of Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk;
- Develop a comprehensive program that will govern the future maintenance of the City's storm water system in an efficient, economic, environmentally and aesthetically acceptable manner for the protection of property and life in accordance with Council Policy 800-04;
- Ensure implementation of Best Management Practices (BMPs) and maintenance protocols during maintenance activities to avoid and/or minimize effects to environmental resources, and incorporate the analysis of the operational and pollution prevention benefits of each proposed project; and
- Create an integrated comprehensive review process for annual maintenance activities that will facilitate authorizations from local, state and federal regulatory agencies.

The Master Program is limited to those storm water facilities that are maintained by the City's SWD of the Transportation and Storm Water Department (T&SWD). The storm water facilities to be maintained pursuant to the Master Program include open flood control channels (concrete and/or earthen) created specifically for the conveyance of storm water. Natural creeks and streams are also included in the storm water system when pro-active maintenance would be necessary to restore storm water conveyance capacities to prevent property damage and protect life during periods of high storm water runoff.

The nature of maintenance would be determined by the individual characteristics associated with each component of the storm water system. Activities would be limited to that determined to be necessary by facility-specific hydrology and hydraulic studies, and would involve removal of accumulated plants and/or sediment to restore as-built or natural conveyance capacities. Occasionally, maintenance would be done by hand but, in most cases, it would include various types of excavation equipment and transport trucks. Each maintenance activity would follow maintenance protocols identified in the Master Program designed to minimize and reduce effects to environmental resources.

The frequency of maintenance under the proposed Master Program would vary for each facility due to site characteristics (e.g. structure type and size, topography) as well as seasonal considerations (wet versus dry winters). It is anticipated that most facilities would not be maintained more frequently than once every three years on average. However, some facilities may need to be maintained on an annual basis. Individual maintenance activities would generally be completed within a matter of days.

1.2 PURPOSE OF EIR

This document has been prepared as a PEIR in accordance with Section 15168 (a)(3) of the State CEQA Guidelines. Under this section, a PEIR “may be prepared on a series of actions that can be characterized as one large project and are related...in connection with the issuance of rules, regulations, plans or other general criteria to govern the continuing program.” This PEIR has been prepared to achieve the following objectives:

- Inform decision-makers and the general public of the potential environmental consequences of the approval and implementation of the proposed Master Program;
- Identify project alternatives or mitigation measures that are available to avoid or reduce potential significant environmental impacts;
- Serve as a basis for environmental review of subsequent maintenance activities associated with maintaining the City’s storm water system;
- Provide environmental review for responsible agencies with jurisdiction over maintenance activities within the City’s storm water system; and
- Streamline the environmental review for subsequent maintenance activities to occur.

In order to meet the first objective, this PEIR establishes a series of baseline conditions for resources which may be impacted by maintenance activities. This effort included extensive biological and historical resource surveys of the storm water system. In addition, the City identified the probable extent and nature of activities which would be conducted under the Master Program. Based on this foundation, the PEIR identifies physical changes in the environment that may result from future maintenance activities (refer to Chapter 4.0). In addition, the PEIR identifies mitigation measures that are available to avoid or minimize effects that would result in significant environmental impacts. These mitigation measures are identified in Chapter 4.0 of the PEIR as well as the Mitigation Monitoring and Reporting Program (MMRP) included in Chapter 11.0. These measures will be included in individual maintenance documents and permits to ensure implementation.

1.3 SCOPE OF PEIR

The scope of this PEIR was determined by an Initial Study completed by the City as well as comments received during a scoping meeting held on July 20, 2005 and in response to a Notice of Preparation (NOP) that was distributed on July 25, 2005. The Initial Study, NOP and the comment letters that were received are contained in Appendix A.1.

Based on this information, it was determined that implementation activities under the proposed Master Program might result in potentially significant adverse environmental impacts in the following areas:

- Aesthetics/Neighborhood Character;
- Air Quality;
- Biological Resources;

- GHG Emissions;
- Historical Resources;
- Hydrology;
- Land Use;
- Noise;
- Paleontological Resources;
- Solid Waste: and
- Water Quality.

1.4 ORGANIZATION OF EIR

The PEIR is comprised of a series of volumes. Volume 1 is commonly referred to as the PEIR because it contains all of the basic elements mandated by CEQA. As such, Volume 1 contains a complete description of the proposed Master Program, a comprehensive discussion of impacts and mitigations associated with implementation of the Master Program and a discussion of alternatives and cumulative impacts. Volume 1 also contains Appendix A.1, which documents comments and public involvement on the project. Volume 2 contains all of the technical reports and other documents that are referenced in the Draft PEIR. Volume 3 contains a full copy of the Master Program. Volume 4 contains a series of 11 x 17-inch maps illustrating the vegetation associated with each channel. Volume 5 contains the public comments received during the public review period for the original PEIR as well as itemized responses to each of the comments. Subsequent volumes in the Final EIR may be required to contain responses to those comments received on the Draft Recirculated PEIR

1.4.1 Volume 1 (PEIR)

This volume is organized into the following chapters:

- **Executive Summary**, provides a summary of the proposed Master Program along with a table identifying significant impacts, proposed mitigation measures, and impact rating after mitigation. This chapter also contains a summary of the project alternatives that have been considered and compares the potential impacts of the alternatives with those of the proposed Master Program.
- **Chapter 1.0, Introduction**, contains an overview of the proposed Master Program and the environmental review process.
- **Chapter 2.0, Environmental Setting**, contains a description of the physical environmental conditions in the vicinity of the project area from both a local and regional perspective. The environmental setting is intended, in part, to constitute the baseline physical conditions against which the PEIR determines whether an impact is significant.
- **Chapter 3.0, Project Description**, provides a detailed discussion of the proposed Master Program. It also includes a list of discretionary actions that may be required to implement the Master Program.

- **Chapter 4.0, Environmental Analysis**, provides a detailed evaluation of specific issue areas that may be associated with significant environmental impacts. The discussion of each issue begins with a discussion of the existing conditions related to the issue to serve as a basis of analysis. An evaluation of potential impacts follows. The discussion of impacts is preceded by a statement of specific thresholds that are used to determine if the impacts would be significant. Once the impacts have been evaluated, specific mitigation measures are identified to avoid or reduce significant impacts.
- **Chapter 5.0, Growth Inducement**, evaluates the potential influence the proposed Master Program may have on growth within the region.
- **Chapter 6.0, Cumulative Effects**, identifies the impact of the proposed Master Program in combination with other planned and future development in the region.
- **Chapter 7.0, Alternatives**, provides a description of alternatives to the proposed Master Program.
- **Chapter 8.0, Effects Found Not to be Significant**, lists all of the issues determined in the Initial Study to be not significant, including a brief summary of the basis for this determination.
- **Chapter 9.0, Significant Irreversible Environmental Changes that Would Be Involved in the Proposed Action, Should It Be Implemented**, identifies all of the significant impacts related to the implementation of the proposed Master Program.
- **Chapter 10.0, Significant Unavoidable Adverse Impacts**, identifies environmental impacts which cannot be avoided.
- **Chapter 11.0, Mitigation Monitoring and Reporting Program**, identifies the mitigation measures from Chapter 4.0 which would reduce environmental impacts associated with implementation of the Master Program.
- **Chapter 12.0, References**, lists all of the documents which are cited in the PEIR but not included in the appendix volumes.
- **Chapter 13.0, Individuals and Agencies Consulted**, lists all of the individuals who are cited in the PEIR.
- **Chapter 14.0, Certification Page**, identifies all of the persons who were directly involved in the preparation of the PEIR.
- **Appendix A.1** includes the scoping letter, NOP, comments, and the scoping meeting minutes.

1.4.2 Volume 2 (Technical Reports)

Volume 2 contains the technical studies which were prepared in association with the PEIR including issues related to biology and historical resources. These reports are referenced throughout the PEIR. In an effort to reduce paper consumption, Volume 2 has been placed on the compact disk (CD) attached to the back cover of Volume 1.

1.4.3 Volume 3 (Master Program)

Volume 3 contains a complete copy of the proposed Master Program. In an effort to reduce paper consumption, Volume 3 has been placed on the CD attached to the back cover of Volume 1.

1.4.4 Volume 4 (Vegetation Maps)

Volume 4 contains the complete set of vegetation and wetland delineation maps for the facilities to be maintained under the proposed Master Program. In an effort to reduce paper consumption, Volume 4 has been placed on the CD attached to the back cover of Volume 1.

1.4.5 Volume 5 (Comments and Responses on Original PEIR)

Volume 5 contains the public comments received during the public review period for the original PEIR as well as itemized responses to each of the comments. In an effort to reduce paper consumption, Volume 5 has been placed on the CD attached to the back cover of Volume 1.

1.5 EIR REVIEW PROCESS

The EIR process occurs in two basic stages. The first stage is the Draft PEIR, which offers the public the opportunity to comment on the document, while the second stage is the Final PEIR, which provides the basis for approving the proposed Master Program. The Final PEIR process will include preparation of detailed responses to comments received during the public review period and modifications to the Draft PEIR which are warranted based on public comment. The culmination of this process is the public hearing where the City Council will determine whether to certify the Final PEIR as being complete in accordance with CEQA.

1.6 SUBSEQUENT ENVIRONMENTAL REVIEW

Environmental review for subsequent maintenance activities would be accomplished in accordance with CEQA Guidelines Sections 15168. In accordance with CEQA Guidelines Section 15168, the City will prepare an Initial Study. The results of the Initial Study will determine whether the PEIR adequately addresses the potential impacts associated with subsequent maintenance. The information contained in the Initial Study will be complemented by the SCR Checklist contained in Appendix J of the Master Program. This checklist is principally designed to confirm that all applicable mitigation measures have been included in subsequent maintenance activities.

Pursuant to Section 15168(c), and based on the results of the Initial Study and SCR Checklist, the certified PEIR would satisfy CEQA requirements for subsequent maintenance activities if, the following findings can be made:

- Pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required (Section 15168(c)(2)); and
- All feasible mitigation measures or alternatives identified in the PEIR will be implemented (Section 15168(c)(3)).

Section 15162(a) of the CEQA Guidelines allows a previous EIR to be used in approving a subsequent activity addressed in the previous EIR as long as none of the following conditions apply:

- Substantial changes are proposed to the project which will require major revisions to the EIR due to the involvement of new significant impacts or a substantial increase in the severity of previously identified significant impacts (Section 15162(a)(1));
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions to the previous EIR due to the involvement of new significant impacts or a substantial increase in the severity of previously identified significant impacts (Section 15162(a)(2)); or
- New information of substantial importance is identified, which was not known and could not have been known at the time the original EIR was certified, and that information shows any of the following (Section 15162(a)(3)):
 - Project will have one or more significant effects not discussed in the original EIR (Section 15162(a)(3)(A));
 - Significant effects previously identified will be substantially more severe than identified in the previous EIR (Section 15162(a)(3)(B));
 - Mitigation measures or alternatives determined to be infeasible in the previous EIR would now be feasible, and the applicant declines to implement them (Section 15162(a)(3)(C)); or
 - Mitigation measures or alternatives, which are considerably different from those identified in the previous EIR, would substantially reduce one or more significant effects, and the applicant declines to implement them (Section 15162(a)(3)(D)).

In addition to the Initial Study and SCR Checklist, individual studies required to be completed prior to implementing any maintenance activity would be used to determine whether such activity is within the scope of the PEIR and whether the PEIR adequately describes the activity for CEQA purposes. The Master Program requires an IMP be prepared for each maintenance activity to define the specific maintenance to be carried out and provide a basis for quantifying impacts. An IHHA and an IWQA are required to be completed prior to finalizing each IMP to determine the amount of vegetation and sediment removal needed to improve the capacity of each storm water facility to transport flood waters and design measures needed to reduce water quality effects. In addition, an IBA would be conducted to quantify the maintenance-specific impacts to biological resources to determine if the biological assessment prepared for this PEIR adequately analyzed the impacts, and to verify the amount of mitigation required based on the ratios within the final (MMRP). If sensitive species may be adversely affected by maintenance noise, an INA would be

conducted to determine appropriate actions to avoid significant impacts to sensitive species. Lastly, an IHA would also be conducted to compare impacts analyzed in this PEIR and ensure mitigation measures from the MMRP are implemented for any historic resources that may be affected by maintenance.

Based on consideration of the Initial Study, the SCR Checklist and information contained in individual studies required by the Master Program, the City will determine which of the following CEQA process options would be appropriate for subsequent maintenance activities.

CEQA Option 1: If the documentation shows that the impacts associated with the proposed maintenance activity have been adequately addressed in the PEIR and mitigation will be carried out, as defined in the PEIR and MMRP, no further environmental review will be required, and the PEIR will be used to satisfy CEQA review requirements for the subsequent maintenance activity.

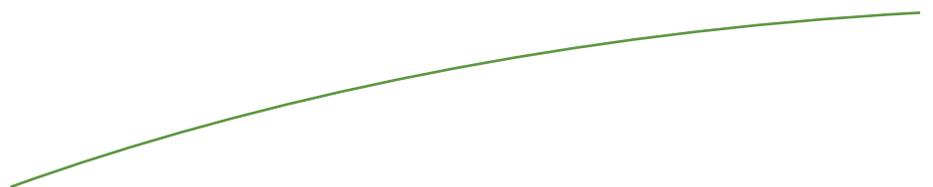
CEQA Option 2: If the documentation shows that the individual maintenance activities are outside the scope of the Master Program and impacts are not adequately addressed and/or adequate mitigation is not proposed, the City will prepare a tiered or new Negative Declaration, Mitigated Negative Declaration, or EIR, pursuant to the CEQA Guidelines Section 15168(c)(1) and CEQA Section 21094.

CEQA Option 3: If the documentation shows that individual maintenance activities are not explicitly included in the PEIR and would require modifications to the Master Program, the City will prepare a Subsequent EIR or a Supplement or Addendum to the certified PEIR, pursuant to the CEQA Guidelines Sections 15168(c)(2) and 15162.

In the event emergency maintenance must occur in a storm water facility included in the Master Program and addressed in the Final PEIR, the Final PEIR may be used to process “after-the-fact” permits which may be required by the City, state or federal agencies for emergency maintenance. In this case, the mitigation measures identified in the PEIR will be applicable to the emergency maintenance activities.



Chapter 2.0
ENVIRONMENTAL SETTING



CHAPTER 2.0 – ENVIRONMENTAL SETTING

2.1 LOCATION

The proposed Master Program would include the maintenance of storm water facilities that are maintained by the SWD. The specific types of facilities that are maintained include natural and man-made channels. Figure 2-1, Regional Location Map, provides an overview of the total study area, indicating the general location of the major storm water channels and basins that would be included in the Master Program. Chapter 3.0, Project Description, provides a more detailed delineation of the location of each major storm water facility.

2.2 PHYSICAL CHARACTERISTICS

The City's storm water system is distributed over the 342.4 square-mile metropolitan area. As a result, the physical characteristics vary with the individual components of the storm water system. However, the general characteristics of the metropolitan area are described below.

The landform features are typical of the coastal plain area. The coastal plain slopes gently upwards to the eastern foothills and has eroded into separate mesas. The coastal plain has been incised by numerous side canyons flowing into major storm water facilities that generally flow westward towards the coast. These major facilities include Alvarado Creek, Chollas Creek, Rose Creek, Nestor Creek, San Diego River, Peñasquitos Creek, Otay River, and Tijuana River.

While east-west canyons and valleys divide the coastal plain into north-south components, three marine terraces separate the coastal plain into three platform mesas. Each terrace steps up in elevation towards the inland foothills. The La Jolla Terrace is closest to the coast at elevations of 50 to 70 feet above mean sea level (AMSL). Further east at elevations of 300 to 500 feet AMSL is the Linda Vista Terrace, which is the largest terrace and contains such "mesa" communities as Mira Mesa, Kearny Mesa, and Clairemont Mesa. The majority of the third terrace, the Poway Terrace, has been eroded away and is no longer a distinct landform.

The study area has a large diversity of vegetation and wildlife. Eleven wetland/riparian and seven upland vegetation communities occur within the study area. Wetland/riparian vegetation communities include southern riparian forest, southern sycamore riparian woodland, southern willow scrub, mule fat scrub, riparian scrub, freshwater marsh, cismontane alkali marsh, southern coastal salt marsh, coastal brackish marsh, disturbed wetland, and natural flood channel/open water/streambed. Upland vegetation communities include Diegan coastal sage scrub, southern mixed chaparral, non-native grassland, eucalyptus woodland, non-native vegetation/ornamental, disturbed habitat/ruderal, and developed land. A total of 96 animal species were observed/detected within the study area, including 12 butterflies (among other invertebrates), 1 amphibian, 3 reptiles, 72 birds, and 8 mammals.

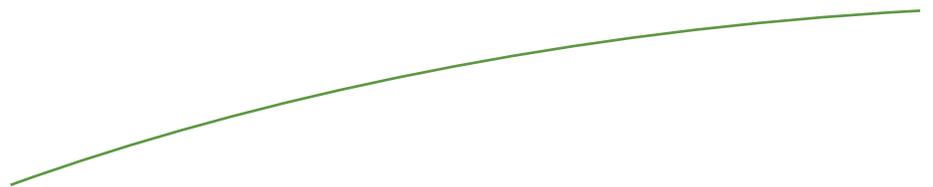
2.3 APPLICABLE LAND USE PLANS

The following planning documents are applicable to the Master Program and are further discussed in Section 4.1, Land Use:

- City of San Diego General Plan (General Plan);
- City of San Diego Local Coastal Programs;
- Community, Land Use, Park/Preserve, and Other City Area Plans;
- City of San Diego Environmentally Sensitive Lands (ESL) Regulations;
- City of San Diego Historical Resources Regulations; and
- City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan.



Chapter 3.0
PROJECT DESCRIPTION



CHAPTER 3.0 – PROJECT DESCRIPTION

3.1 BACKGROUND INFORMATION

3.1.1 History

During the early 20th century, prior to the establishment of major communities and development, the City relied on natural hydrology to provide conveyance of runoff. Proactive maintenance of storm water facilities began in 1933 under the Depression-era federal Works Project Administration. Facilities were manually cleaned using shovels and buckets. During World War II, the City witnessed exponential growth, including the construction of new streets and housing, and vast changes to its landscape to accommodate war-related facilities. These activities increased the amount of impervious surface, changed drainage flow patterns, and altered the natural balance between runoff and natural absorption. This, in turn, substantially increased the volume, frequency, and velocity of storm water flows. Although the City constructed storm water facilities, the pace of growth still dictated the need for improved capacity and preventative maintenance.

Mechanized maintenance was first introduced after World War II. The City acquired surplus military equipment, power shovels, and farm tractors. Maintenance consisted of grading channels and pushing the waste material to the sides in a practice called sidecasting. By the mid-1950s, the City implemented annual inspections, completed the first mapping of its storm water infrastructure, and adopted requirements for private construction of storm water infrastructure associated with new commercial and residential developments. In subsequent decades, the number of storm water structures increased, generally coinciding with population and economic growth trends. Likewise, the City modernized its equipment to include bulldozers, excavators, backhoes, and skid-steers, thus providing more efficient and flexible maintenance methods. The practice of sidecasting was also replaced with disposal of waste in landfills.

In the mid-1990s, after a statewide initiative to educate local governments about the environmental regulations associated with the maintenance of urban storm water infrastructure, the SWD embarked on its first application for a master storm water system maintenance permit. In 2002, this effort was postponed after the City and state and federal Resource Agencies recognized that a programmatic approach to storm water facilities maintenance would provide a more thorough and comprehensive analysis of the environmental impacts of storm water maintenance.

In 2008, the City of San Diego's storm drain system operations and maintenance functions were aligned with storm water pollution prevention functions (creating SWD) to realize efficiencies from integrating planning and implementation efforts. To facilitate this integration, SWD initiated the development of a strategic planning framework and asset management program in 2009. An objective in the asset management program is to establish a system and procedures to manage storm water infrastructure (including prioritization of maintenance work) that considers economic, social and environmental factors, including SWD's water quality-related goals. Specifically, SWD will use an evaluation process under the Master Program to identify and prioritize its channel maintenance work that considers both flood control and water quality costs and benefits.

3.1.2 Existing Storm Water System

The City's storm water system is composed of a variety of facilities which transport surface runoff to the Pacific Ocean or other receiving waters (e.g., lakes). The City's storm water system is described in City Council Policy 800-04. The City's Storm Water Standards Manual defines the Stormwater Conveyance System as "private and public drainage facilities by which storm water may be conveyed to Receiving Waters, such as: natural drainages, ditches, roads, streets, constructed channels, aqueducts, storm drains, pipes, street gutters, or catch basins."

Storm water runoff is typically related to high-flow rain events that are conveyed quickly through the system in a relatively short period of time. Urban runoff is typically related to urban sources, such as landscape irrigation, that is slowly, but constantly, conveyed through the storm water conveyance system during dry weather conditions. Both storm water and urban runoff primarily originate from impervious surfaces on private property and public roadways.

Storm water and urban runoff is collected by a series of storm water facilities which begin with street gutters which connect with storm drains which, in turn, connect with natural and constructed drainage channels which convey runoff to receiving waters. Typically, storm water and urban runoff are first collected by gutters located in the public-right-of way. Major development projects may tie directly into a public storm drain system via private drains and pipes on-site but the majority of land within the City simply drains to an adjacent gutter. Flows from gutters are carried downstream until runoff volumes warrant a curb inlet and undergrounding. At this point, runoff is collected by an inlet and enters a storm drain pipe (typically made of reinforced concrete pipe).

As the runoff moves down the storm water basin, more and more pipes connect and the system gradually gets larger to handle the additional water. Eventually, storm drain pipes and certain surface flows from the public right-of-way discharge directly into public or private open storm water channels. The discharge points within these facilities are commonly referred to as outfalls. Outfalls consist of a variety of structures designed to reduce the discharge velocities to minimize erosion. Typical erosion control features associated with outfalls include: revetments; rip rap or armored sides; headwalls and endwalls; flow/grade control and drop structures; and dissipation piles. Channels that have been modified to run underground or under roadways (via pipes or concrete structure), known as culverts eventually connect to an open channel downstream.

Most of the larger storm water channels are public while the smaller channels tend to be on private property. Many of the public storm water channels are improved, "as-built" or engineered, armored (trapezoidal concrete-lined bottom and sides). These facilities are specifically designed to convey flood water. However, other storm water facilities are natural drainage channels that carry runoff.

The SWD is responsible for maintaining a number of the larger storm water facilities located throughout the City of San Diego. Other facilities are the responsibility of other City departments. In accordance with Council Policy 800-04, SWD generally accepts responsibility for maintenance of public drainage facilities which are designed and constructed to City standards and located within a public street or drainage easement dedicated to the City.

3.2 OBJECTIVES OF PROGRAM

The objectives of the Master Program can be summarized as follows:

- Fulfill the mandate of Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk;
- Develop a comprehensive program that will govern the future maintenance of the City's storm water system in an efficient, economic, environmentally and aesthetically acceptable manner for the protection of property and life, in accordance with Council Policy 800-04;
- Ensure implementation of Best Management Practices (BMPs) and maintenance protocols during maintenance activities to avoid and/or minimize effects to environmental resources, and incorporate the analysis of the operational and pollution prevention benefits of each proposed project; and
- Create an integrated comprehensive review process for annual maintenance activities that will facilitate authorizations from local, state and federal regulatory agencies.

3.2 CHARACTERISTICS OF PROGRAM

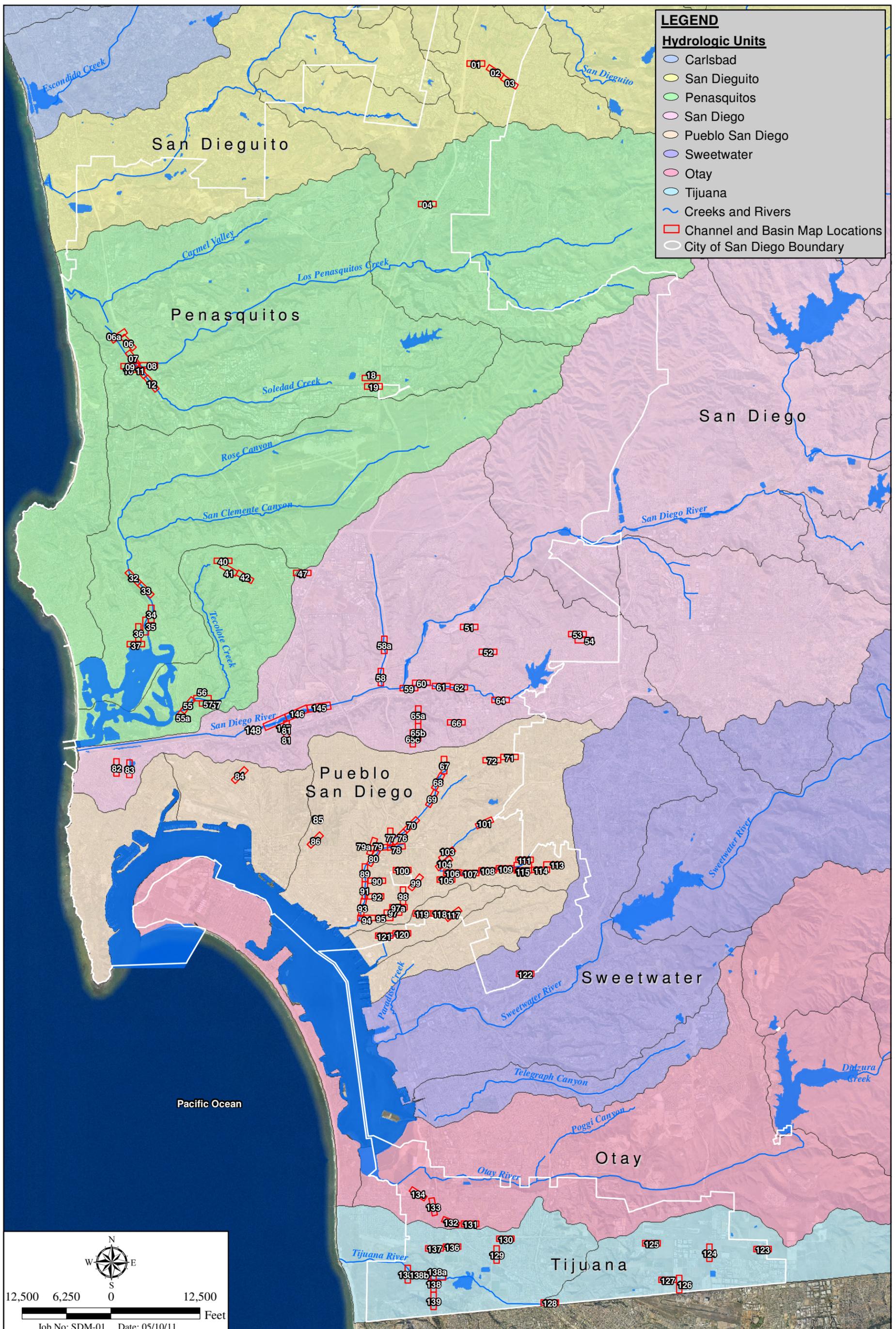
The Master Program includes approximately 115 individual segments within approximately 32 miles of storm water facilities to be included in this Master Program. For tracking purposes, SWD has assigned a number to each of major storm water facility segments under its responsibility. Table 3-1 identifies each of these segments included in the Master Program. These segments are considered likely to require periodic maintenance to effectively convey flood water. As not all of the storm water facilities within the purview of SWD are expected to require periodic maintenance and are not included in the Master Program, the map numbering identified in Table 3-1 is not always consecutive. Table 3-1 contains a variety of pertinent information including a general description and location of the facility, construction type, applicable planning policies, and the estimated width of disturbance caused by anticipated maintenance. As illustrated in Table 3-1, approximately half of the segments (16 miles) have concrete bottoms while the other half (16 miles) have earthen bottoms.

Figure 3-1 illustrates the general location of the storm water facilities included in the Master Program within the respective Hydrologic Units (HUs), as established by the Regional Water Quality Control Board (RWQCB). Figures 3-2a through 3-2e illustrate the location of these storm water facilities on large-scale aerial photographs. Detailed maps illustrating the location of each facility including access, staging and stockpiling locations are contained in Appendix A of the Master Program as well as the vegetation maps contained in Appendix D.2 of this PEIR.

The City prepared the Master Program to guide future maintenance activities. The Master Program has also been prepared in response to requests from state and federal agencies to consolidate storm water maintenance into a single permit process to facilitate review. The Master Program describes the maintenance techniques as well as the protocols to address the impact of maintenance activities with respect to environmental resources. It also identifies a process whereby maintenance activities would be defined and reviewed by state and federal

agencies with jurisdiction over biological and aquatic resources. The following discussion addresses these aspects of the Master Program in more detail. A complete copy of the Master Program is included in Appendix B, which is included as Volume 3 of the EIR.

Many of the open storm water facilities in the urbanized areas were not designed to support vegetation. Vegetation tends to slow flows and increase the volume of runoff within these facilities. When the increase in volume exceeds the capacity, water spills out and causes flooding to adjacent areas. The accumulation of sediment in these facilities compounds the diminished capacity to transport flood water related to vegetation. Accumulated sediment reduces the volume of runoff that a storm water facility can convey without overflowing. To maximize the ability of storm water facilities to transport flood water, maintenance removes vegetation and accumulated sediment to maximize the capacity of the storm water facilities.

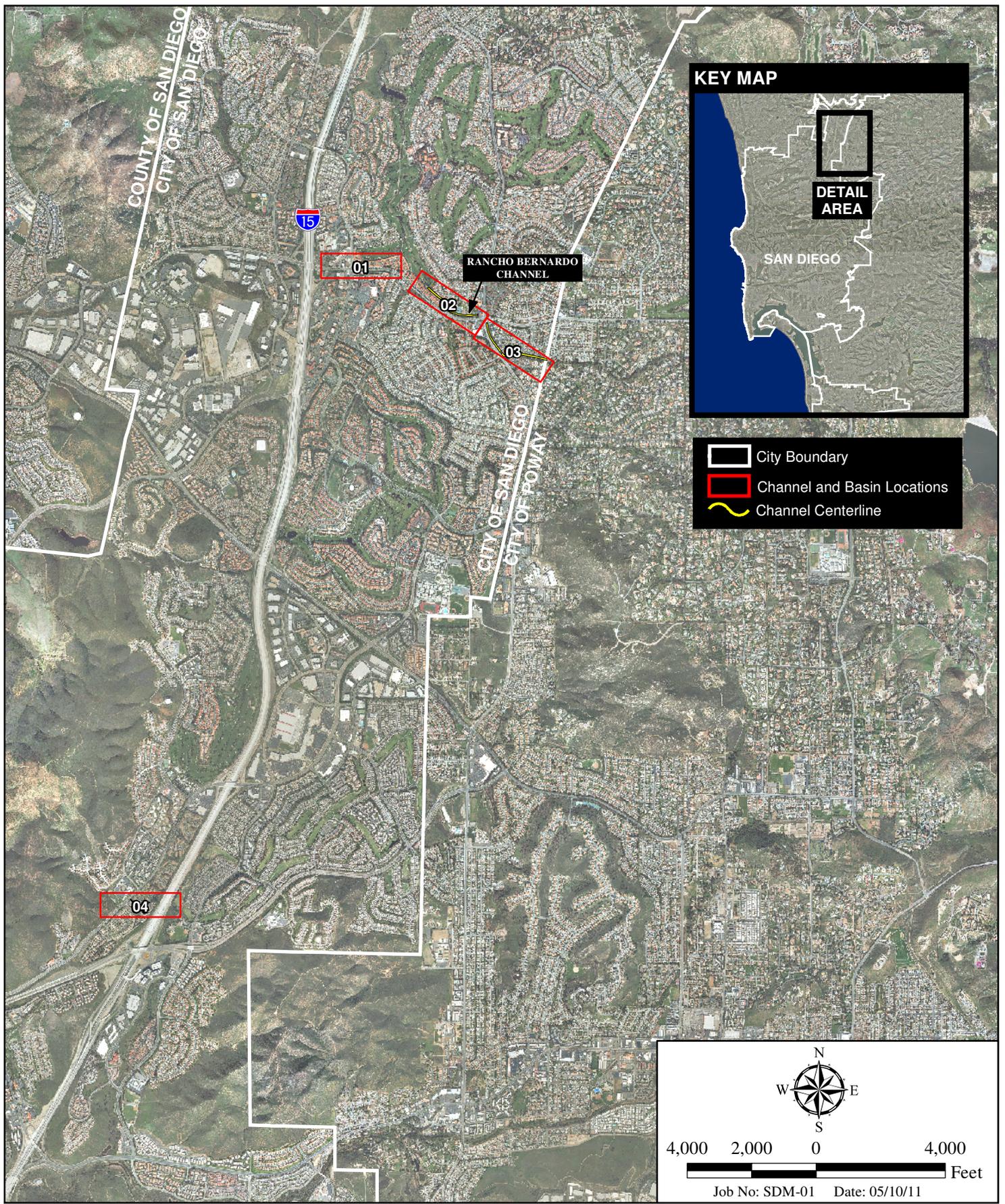


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Storm Water System Relationship to Hydrologic Basins

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-1



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Storm Water Facilities - Rancho Bernardo Area

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-2a

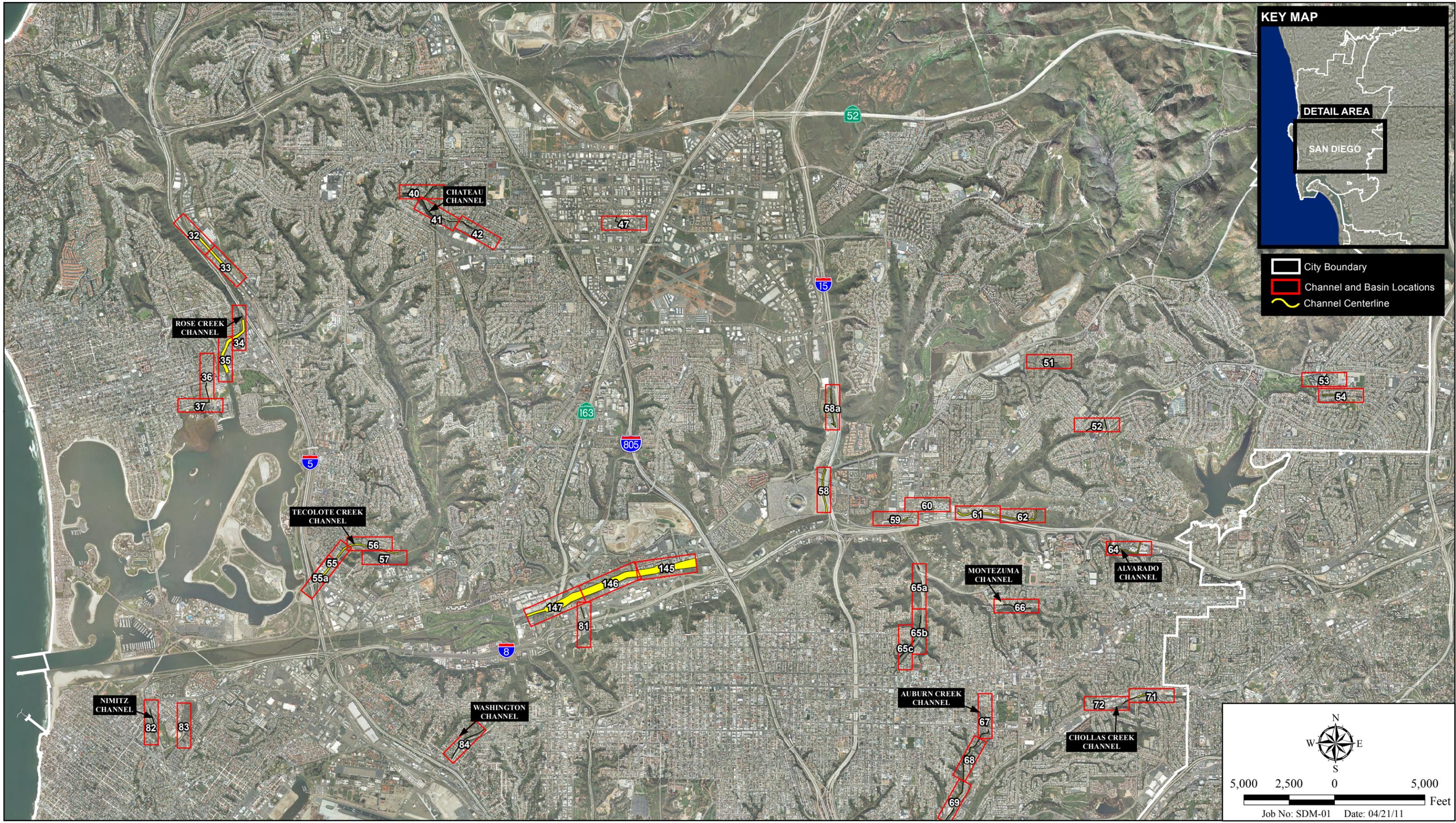


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Storm Water Facilities - Soledad Area

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-2b

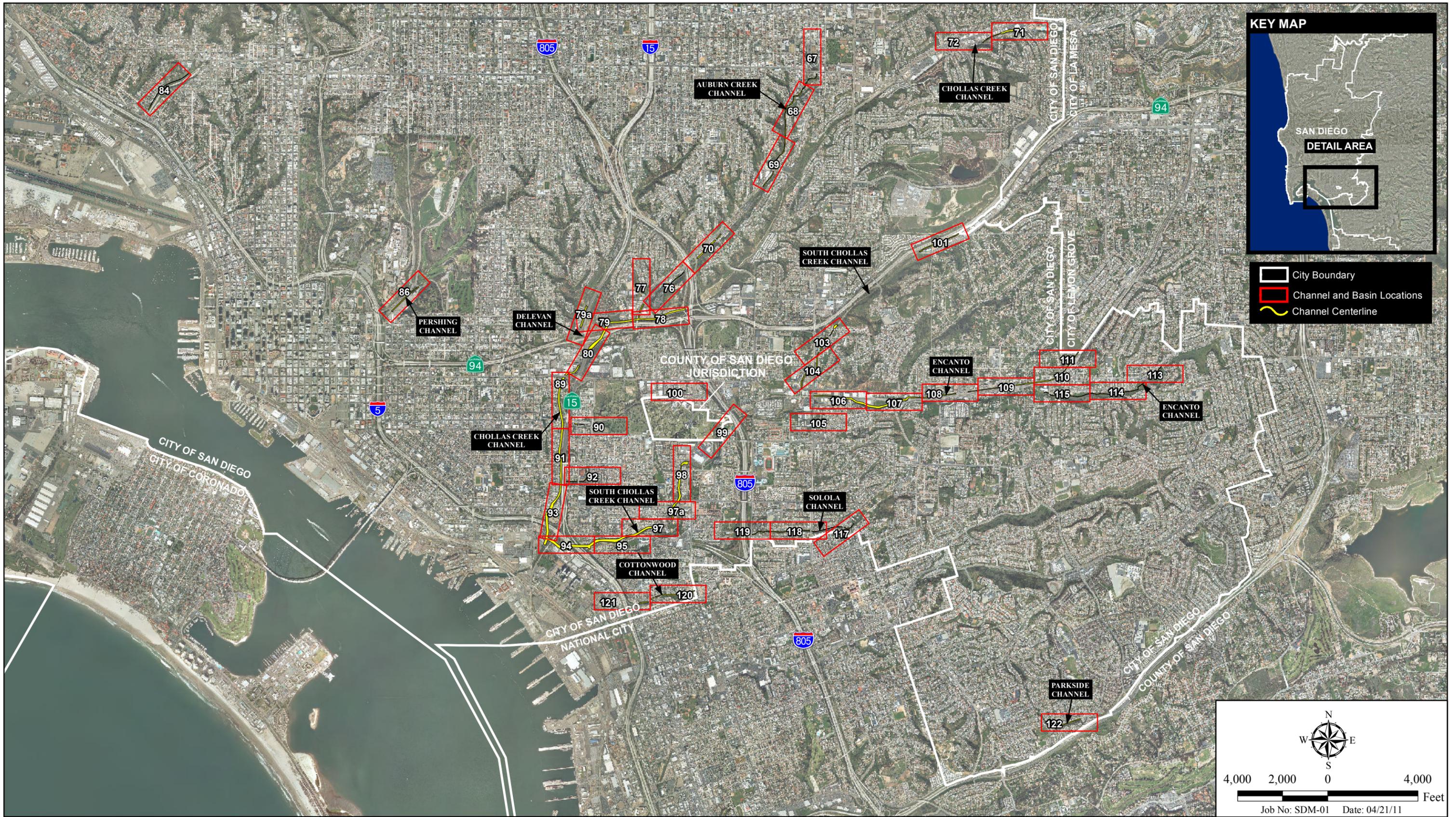


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Storm Water Facilities - I-8 Corridor

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-2c



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Storm Water Facilities - Central San Diego Area

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-2d



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Storm Water Facilities - Otay Mesa Area

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 3-2e

**Table 3-1
 MASTER PROGRAM STORM WATER FACILITIES**

Map No. ¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width ² (feet)
				Concrete Bottom	Earthen Bottom			
1	San Dieguito	Rancho Bernardo Rd & Bernardo Center Dr	116		116	N	N	15
2	San Dieguito	Rancho Bernardo	1,811	1,811	0	N	N	14
3	San Dieguito	Rancho Bernardo	2,487	2,439	48	N	N	14
4	Peñasquitos	11044 Via San Marco	711	73	638	N	N	5
6	Peñasquitos	11689 Sorrento Valley Rd	1,847	1,470	378	Y	N	20
6a	Peñasquitos	3000 Industrial Court	682	417	265	Y	N	12
7	Peñasquitos	Los Peñasquitos Creek Channel	1,609		1,609	Y	Y	104
8	Peñasquitos	Los Peñasquitos Creek Channel	1,600		1,600	Y	Y	104
9	Peñasquitos	11000 Roselle St / 11100 Flinkote Ave	1,030	1,016	14	Y	N	15
10	Peñasquitos	Dunhill St & Roselle St	405		405	Y	N	16
11	Peñasquitos	Soledad Creek Channel	2,539	891	1,648	Y	Y	26
12	Peñasquitos	Soledad Creek Channel	1,397	1,397		Y	Y	59
18	Peñasquitos	Maya Linda & Via Pasar	964		964	N	N	22
19	Peñasquitos	Candida & Via Pasar	1,178	1,178		N	N	12
32	Peñasquitos	Rose Creek Channel	1,349	1,337	12	N	Y	57
33	Peñasquitos	Rose Creek Channel	1,329	1,329		N		57
34	Peñasquitos	Rose Creek Channel	1,416	376	1,040	Y	N	124
35	Peñasquitos	Rose Creek Channel	2,270		2,270	Y	N	104

**Table 3-1 (cont.)
 MASTER PROGRAM STORM WATER FACILITIES**

Map No. ¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width ² (feet)
				Concrete Bottom	Earthen Bottom			
36	Peñasquitos	Mission Bay High School	900	900	1	Y	N	10
37	Peñasquitos	Pacific Beach Dr & Olney St	1,078	178	900	Y	N	17
40	Peñasquitos	Chateau Creek Channel	2,242	1,387	856	N	N	18
41	Peñasquitos	Chateau Creek Channel	2,471	1,681	790	N	N	20
42	Peñasquitos	Chateau Creek Channel	874	834	41	N	N	20
47	San Diego	7969 & 7971 Engineer Rd	1,230		1,230	N	N	8
51	San Diego	Red River Dr & Conestoga Dr	876	876		N	N	10
52	San Diego	Camino del Arroyo	1,039		1,039	N	N	9
53	San Diego	Cowles Mtn Channel	711	378	333	N	N	8
54	San Diego	San Carlos Creek Channel	957	433	524	N	N	10
55a	Peñasquitos	West Morena Blvd	270		270	N	N	12
55	Peñasquitos	Tecolote Creek Channel	2,584	2,443	142	N	N	25
56	Peñasquitos	Tecolote Creek Channel	2,018	1,606	412	N	N	29
57	Peñasquitos	Tecolote Creek Channel	768	120	648	N	N	29
58	San Diego	Murphy Canyon Creek Channel	2,523	772	1,752	N	N	57
58a	San Diego	Murphy Canyon Creek Channel	2,371	633	1,738	N	N	15
59	San Diego	Alvarado Creek Channel	1,072	869	203	N	Y	46
60	San Diego	Alvarado Creek Channel	582	570	12	N	Y	29
61	San Diego	Alvarado Creek Channel	2,130	2,104	26	N	N	46
62	San Diego	Alvarado Creek Channel	2,392	2,348	45	N	N	32
64	San Diego	Alvarado Creek Channel	2,600	1,335	1,265	N	Y	40
65a	San Diego	Fairmont Creek Channel	813	749	64	N	Y	19
65b	San Diego	Fairmont Channel	848	38	811	N	Y	12

Table 3-1 (cont.) MASTER PROGRAM STORM WATER FACILITIES								
Map No.¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width² (feet)
				Concrete Bottom	Earthen Bottom			
65c	San Diego	Fairmont Channel	1,235	1,233	2	N	Y	15
66	San Diego	Montezuma Channel	1,420	1,420		N	N	19
67	Pueblo San Diego	Auburn Creek Channel	635		635	N	N	16
68	Pueblo San Diego	Auburn Creek Channel	2,693	1,566	1,127	N	N	20
69	Pueblo San Diego	Auburn Creek Channel	2,356	2,355	1	N	N	12
70	Pueblo San Diego	Auburn Creek Channel	1,418	413	1,006	N	N	39
71	Pueblo San Diego	Chollas Creek Channel	1,199	376	823	N	N	26
72	Pueblo San Diego	Chollas Creek Channel	435	433	2	N	N	26
76	Pueblo San Diego	Auburn Creek Channel	964		964	N	N	27
77	Pueblo San Diego	Auburn Creek Channel	422		422	N	N	33
78	Pueblo San Diego	Chollas Creek Channel	2,633	2,633		N	N	54

Table 3-1 (cont.) MASTER PROGRAM STORM WATER FACILITIES								
Map No.¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width² (feet)
				Concrete Bottom	Earthen Bottom			
79	Pueblo San Diego	Chollas Creek Channel	1,410	1,410		N	N	54
79a	Pueblo San Diego	Delevan Dr	991		991	N	N	30
80	Pueblo San Diego	Chollas Creek Channel	1,899	539	1,360	N	N	54
81	San Diego	Camino de la Reina & Camino del Arroyo	648	648		N	N	9
82	San Diego	Nimitz Channel	865	234	631	Y	N	12
83	San Diego	Famosa Blvd & Valeta St	185	66	119	Y	N	20
84	Pueblo San Diego	Washington Channel	2,515	1,026	1,489	N	N	20
86	Pueblo San Diego	Pershing Channel	2,047	1,698	349	N	N	20
89	Pueblo San Diego	Chollas Creek Channel	2,442	2,318	124	N	N	25
90	Pueblo San Diego	Imperial and Gillette Street	385		385			
91	Pueblo San Diego	Chollas Creek Channel	2,498	2,498		N	N	32
92	Pueblo San Diego	35th St & Martin Ave	1,097		1,097	N	N	12 (t) 5 (b)

Table 3-1 (cont.) MASTER PROGRAM STORM WATER FACILITIES								
Map No.¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width² (feet)
				Concrete Bottom	Earthen Bottom			
93	Pueblo San Diego	Chollas Creek Channel	2,590	1,267	1,323	Y	N	54
94	Pueblo San Diego	South Chollas Creek Channel	2,595	40	2,555	Y	N	59
95	Pueblo San Diego	South Chollas Creek Channel	1,604		1,604	Y	N	50
97	Pueblo San Diego	South Chollas Creek Channel	1,098		1,098			45
97a	Pueblo San Diego	South Chollas Creek Channel	854	292	562			55
98	Pueblo San Diego	South Chollas Creek Channel	2,800	661	2,139			49
99	Pueblo San Diego	South Chollas Creek Channel	278		278			34
100	Pueblo San Diego	42nd & J St	257		257	N	N	12
101	Pueblo San Diego	South Chollas Creek Channel	1,911	1,122	789	N	Y	34
103	Pueblo San Diego	South Chollas Creek Channel	1,237	1,046	191	N	Y	34

**Table 3-1 (cont.)
 MASTER PROGRAM STORM WATER FACILITIES**

Map No. ¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width ² (feet)
				Concrete Bottom	Earthen Bottom			
104	Pueblo San Diego	South Chollas Creek Channel	1,969	1,071	898	N	Y	34
105	Pueblo San Diego	Euclid & Castana	277		277	N	N	20
106	Pueblo San Diego	Encanto Channel	2,436	405	2,031	N	N	44
107	Pueblo San Diego	Encanto Channel	2,607	644	1,963	N	N	44
108	Pueblo San Diego	Encanto Channel	1,900	1,900		N	N	29
109	Pueblo San Diego	Encanto Channel	2,390	1,793	597	N	N	29
110	Pueblo San Diego	Encanto Channel	1,606	1,418	188	N	N	29
111	Pueblo San Diego	Encanto Channel	842	719	123	N	N	29
113	Pueblo San Diego	Jamacha Channel	815		815	N	N	15

Table 3-1 (cont.) MASTER PROGRAM STORM WATER FACILITIES								
Map No.¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width² (feet)
				Concrete Bottom	Earthen Bottom			
114	Pueblo San Diego	Jamacha Channel	2,683		2,683	N	N	15
115	Pueblo San Diego	Jamacha Channel	1,886		1,886	N	N	20
117	Pueblo San Diego	Solola Channel	1,244	1,176	68	N	N	20
118	Pueblo San Diego	Solola Channel	2,416	2,084	332	N	N	18
119	Pueblo San Diego	Solola Channel	846	728	118	N	N	8
120	Pueblo San Diego	Cottonwood Channel	1,904	1,885	19	Y	N	23
121	Pueblo San Diego	Cottonwood Channel	530	522	8	Y	N	19
122	Sweetwater	Parkside Channel	1,202	1,163	40	N	N	14
123	Tijuana	Sanyo Channel	1,255	1,225	30	N	N	15
124	Tijuana	La Media & Airway	628		628	N	N	20
125	Tijuana	Camino Maquiladora & Cactus	1,073	822	251	N	X	10
126	Tijuana	Siempre Viva & Bristow	2,321	140	2,181	N	X	19
127	Tijuana	Britannia & Bristow	597		597	N	N	20
128	Tijuana	Virginia Channel	503		503	N	N	20

Map No. ¹	Hydrologic Unit	Facility Description	Total Length (feet)	Facility Type (length in feet)		Coastal Zone?	Multiple Habitat Designation?	Estimated Disturbance Width ² (feet)
				Concrete Bottom	Earthen Bottom			
129	Tijuana	Smythe Channel	1,956	1,635	321	N	X	12
130	Tijuana	Smythe Channel	1,365		1,365	N	X	24
131	Otay	Nestor Creek Channel	1,201	978	223	N	N	10
132	Otay	Nestor Creek Channel	968		968	N	N	29
133	Otay	Nestor Creek Channel	2,982		2,982	N	N	54
134	Otay	Nestor Creek Channel	1,309	990	320	Y	N	30
136	Tijuana	Tocayo Channel	2,637	2,485	152	Y	N	8
137	Tijuana	Tocayo Channel	1,076	1,043		Y	N	8
138a	Tijuana	Tijuana River Pilot Channel	2,476		2,476	Y	Y	25
138b	Tijuana	Tijuana River Pilot Channel	2,653		2,653	Y	Y	25
138c	Tijuana	Tijuana River Pilot Channel	719		719	Y	Y	25
138	Tijuana	Smugglers Gulch Channel	1,837		1,837	Y	Y	35
139	Tijuana	Smugglers Gulch Channel	1,031		1,031	Y	Y	35
145	San Diego	First San Diego River Improvement Project	3,325		3,325	N	N	250
146	San Diego	First San Diego River Improvement Project	3,231		3,231	N	N	250
147	San Diego	First San Diego River Improvement Project	3,370		3,370	N	N	250

¹ The Storm Water Division assigns a map number to each of the facilities which are within its jurisdiction. However, not all of these facilities are included in the Master Program. Thus, the map numbers in this table are not all sequential.

² Disturbance width for channels wider than 20 feet (top of bank to top of bank) is assumed to be the width of the bottom of the channel plus two feet up each side slope. Disturbance width for channels less than 20 feet includes bottom and all of the side slopes.

3.3.1 Storm Water Facility Maintenance

Determination of Need

SWD would use an evaluation process defined in the Master Program to identify and prioritize its channel maintenance work for the coming year that considers each segment's ability to meet SWD's flood control and water quality levels of service. Initially, SWD would prepare an Annual Maintenance Needs List based on routine inspections and public complaints. Based on hydrology studies and other considerations such as relevant water quality regulations and pollutant priorities in each watershed, an Annual Maintenance Priority List would be prepared. The evaluation of the need for maintenance would include quantitative and qualitative metrics regarding primarily flood risk to life and property, but also would consider other factors such as, water quality priorities in the watershed, aesthetics, natural resources and community needs.

Routine inspection and assessment activities are conducted by the SWD to identify storm water system facilities that need maintenance. Information obtained from the inspection and assessment activities would be used in the annual evaluation process described above. These inspections include Storm Patrol Inspection (SPI), Routine Storm Water Facility Inspection (RSWFI), and Service Notification Inspection (SNI).

The SPIs occur on an infrequent basis, typically during rain events. An SPI is triggered when rainfall prevents crews from performing their regularly assigned duties. The SPIs are focused on inspecting storm water facilities that have been deemed critical and/or adversely affected as a result of recent rain events.

The RSWFIs typically are scheduled on an annual basis. These inspections note drainage conditions, including external conditions that may lead to system failures, and/or equipment access problems. The frequency of routine inspections is normally increased if site conditions, drainage conditions, or maintenance history show that it is warranted.

The SNIs are based upon notification from the public that a specific facility may need maintenance. The primary source of public complaints is illegally dumped materials such as trash, appliances, furniture, shopping carts, and tires.

Frequency of Maintenance

The frequency of storm water facility maintenance would be based upon several factors including, but not limited to, routine inspections, risk management claims, and/or past maintenance history. Maintenance frequencies typically would occur at three-year intervals.

Mechanical Maintenance

Mechanical maintenance would utilize equipment often used in excavation (e.g. skid-steers, backhoes, Gradalls, excavators, loaders, dump trucks, and bulldozers) to remove sediment and vegetation from storm water facilities. Depending on the conditions associated with each facility, different types of mechanized equipment would be utilized. The decision as to which

mechanized equipment would be used would be based upon the density and volume of accumulated material; vegetation growth; the size (width and depth) of the facility; access; the flow characteristics of the facility; and the need to complete maintenance activities in a timely and efficient manner. Equipment would range in size from four feet wide for the smallest skid-steer to 14.5 feet wide for a large bulldozer. Smaller equipment such as skid-steers would typically be used for narrow, shorter channels, while larger equipment would be used for wider, longer channel segments. Small channels are typically only five feet in width and are less than 1,000 feet in length. For all equipment clearing activities, the depth of material to be removed would be based upon the design capacity of the facility.

Maintenance equipment would utilize access routes which have been specifically identified and illustrated in Appendices A and B of the Master Program included as Appendix C of this PEIR.

In most cases, maintenance is expected to occur along the bottom of the facilities and approximately two feet up the adjacent banks. Removal of vegetation on the slopes, beyond the lower two feet is not expected to occur except when the overall channel width is less than 20 feet. In these narrower channels, removal of vegetation on the sides may be necessary to maximize the ability to transport floodwaters. However, for wider channels, the minimal increase in flood water transport capacity resulting from removing vegetation on the side slopes would be outweighed by the additional cost of maintenance and associated biological mitigation (as discussed in Subchapter 5.2).

The amount of vegetation and sediment removed from the bottom of the storm water facilities would be determined by hydrology and hydraulic studies before any maintenance occurs within a storm water facility. These studies would specify maintenance that would range from clearing a pilot channel to removing all the vegetation covering the bottom of a facility. Whenever possible, vegetation would be cleared in a manner that allows some vegetation to remain in the facility to provide wildlife habitat and aesthetic value.

Non-mechanical Maintenance

Where equipment access is limited and trucks cannot access the maintenance area, maintenance would be performed without the use of earthmoving equipment using chain saws, mowers, weed whips and other hand tools). As a result, maintenance would be limited to removal of above-ground vegetation. If the cut vegetation would not interfere with flood capacity, it would be left within the channel unless it is determined that the cut vegetation is invasive (e.g., arundo). In this case, the invasive vegetation would be collected, hauled out by hand, and disposed in a suitable, pre-approved off-site location. With non-mechanical maintenance, the root systems would remain in place. Above-ground removal would not be used when leaving the roots of invasive plants in place could promote their regrowth and downstream colonization. Determination as to the invasiveness of a plant species would be based on the most current California Invasive Plant Council's Invasive Plant Inventory.

Maintenance Protocols

To minimize the impact of storm water maintenance on the environment, the maintenance activities would be performed in accordance with local, state and federal laws governing such activities. In addition, the activities would incorporate, as appropriate, a series of protocols included in the Master Program. These protocols are as follows:

Water Quality (WQ)

- WQ-1 Stabilize designated access roads (or other graded areas) with permeable protective surfacing (e.g., grasscrete), storm water diversion structures (e.g., brow ditches or berms), or crossing structures (e.g., culverts) to control erosion and prevent off-site sediment transport.
- WQ-2 Prevent off-site sediment transport during maintenance through the use erosion and sediment controls within storm water facilities, along access routes and around stockpile/staging areas. Install BMPs such as silt fences, fiber rolls; gravel bags; temporary sediment basins; stabilized maintenance access points (e.g., shaker plates); containment barriers (e.g., silt fence, fiber rolls and/or berms) for material stockpiles; and properly fitted covers for material transport vehicles. Remove temporary erosion or sediment control measures upon completion of maintenance unless their removal would result in greater environmental impact than leaving them in place.
- WQ-3 Store BMP materials on-site to provide complete protection of exposed areas and prevent off-site sediment transport.
- WQ-4 Provide training for personnel responsible for the proper installation, inspection, and maintenance of on-site BMPs.
- WQ-5 Revegetate spoil and staging areas within 30 days of completion of maintenance activities. Monitor and maintain revegetated areas for a period of not less than 25 months following planting.
- WQ-6 Implement sampling and analysis; monitoring and reporting; and post-maintenance management programs per National Pollutant Discharge Elimination System (NPDES) and/or City requirements.
- WQ-7 Avoid storing hazardous materials used during maintenance within 50 feet from storm water facilities. Hazardous materials shall be managed and stored in accordance with applicable local, state and federal regulations.
- WQ-8 Store maintenance-related trash in areas at least 50 feet from storm water facilities, and remove any trash receptacles regularly (at least weekly).
- WQ-9 Install a check dam or other comparable mechanism to slow runoff velocities at the downstream end of a maintenance area when hydrology and hydraulic studies

indicate that maintenance could adversely impact downstream areas. These structures may be removed when vegetation growth has reached a point where the structure is no longer required.

- WQ-10 Inspect earthen-bottom storm water facilities within 30 days of the first 2-year storm following maintenance. Implement erosion control measures recommended by the field engineer, such as fiber blankets, to remediate substantial erosion which has occurred and to minimize future erosion.

Biological Resource Protection (BIO)

- BIO-1 Restrict vehicles to access designated in the Master Program.
- BIO-2 Flag and delineate all sensitive biological resources to remain within or adjacent to the maintenance area prior to initiation of maintenance activities in accordance with the site-specific Individual Biology Assessment (IBA), Individual Hydrology and Hydraulic Assessment (IHHA) and/or Individual Maintenance Plan (IMP).
- BIO-3 Conduct a pre-maintenance meeting on-site prior to the start of any maintenance activity that occurs within or adjacent to sensitive biological resources. The pre-maintenance meeting shall include the qualified biologist, field engineer/planner, equipment operators/superintendent and any other key personnel conducting or involved with the channel maintenance activities. The qualified biologist shall point out or identify sensitive biological resources to be avoided during maintenance, flag/delineate sensitive resources to be avoided, review specific measures to be implemented to minimize direct/indirect impacts, and direct crews or other personnel to protect sensitive biological resources as necessary.
- BIO-4 Avoid introduction of invasive plant species with physical erosion control measures (e.g., fiber mulch, rice straw, etc.).
- BIO-5 Conduct appropriate pre-maintenance protocol surveys if maintenance is proposed during the breeding season of a sensitive animal species. If sensitive animal species covered by the PEIR are identified, then applicable measures from the MMRP shall be implemented under the direction of a qualified biologist to avoid significant direct and/or indirect impacts to identified sensitive animal species. If sensitive animal species are identified during pre-maintenance surveys that are not covered by the PEIR, SWD shall contact the appropriate wildlife agencies and additional environmental review under CEQA will be required.
- BIO-6 Remove arundo through one, or a combination of, the following methods: (1) foliar spray (spraying herbicide on leaves and stems without cutting first) when arundo occurs in monotypic stands, or (2) cut and paint (cutting stems close to the ground and spraying or painting herbicide on cut stem surface) when arundo is intermixed with native plants. When sediment supporting arundo must be removed, the sediment shall be excavated to a depth sufficient to remove the rhizomes, wherever

feasible. Following removal of sediment containing rhizomes, loose rhizome material shall be removed from the channel and disposed offsite. After the initial treatment, the area of removal shall be inspected on a quarterly basis for up to two years, or until no resprouting is observed during an inspection. If resprouting is observed, the cut and paint method shall be applied to all resprouts.

- BIO-7 Avoid mechanized maintenance within 300 feet of a Cooper's hawk nest, 900 feet of a northern harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest. .

Historical Resource Protection (HIST)

HIST-1 Flag, cap or fence all historical resource areas prior to initiation of maintenance activities.

HIST-2 Conduct a pre-maintenance meeting on-site prior to any activity that may occur within or adjacent to sensitive historical resources. The qualified archaeologist shall point out sensitive historical resources to be avoided during maintenance, identify any specific measures which should be implemented to minimize impacts, and direct crews or other personnel to protect sensitive historical resources as necessary.

Waste Management (WM)

WM-1 Dispose and transport compostable green waste material to an approved composting facility, if available.

WM-2 Reuse excavated material, whenever possible, as fill material, aggregate, sand replenishment or other raw material uses. Re-used material (aggregates, soil, sand, or silt) shall be documented in accordance with applicable local, state and federal regulations.

WM-3 Separate waste tires from excavated material and transport them to an appropriate disposal facility. If more than nine tires are in a vehicle or waste bin at any one time, they shall be transported under a completed Comprehensive Trip Log (CTL) to document that the tires were taken to an appropriate disposal facility.

WM-4 Log and transport any hazardous materials encountered during maintenance under a hazardous materials manifest to an approved hazardous waste storage, recycling, treatment or disposal facility. Personnel handling hazardous materials shall have the appropriate training to handle, store, transport and/or dispose. Hazardous materials (e.g., machine oil, mercury switches and refrigerant gases) shall be removed from appliances and disposed in accordance with this protocol.

Access

The Master Program designates specific access for each of the storm water facilities included in the proposed Master Program (Refer to Appendix A of the Master Program). Access was determined by utilizing previous access routes, limiting the area of impact to the adjacent properties, and providing a safe and secure point for equipment and crews to enter and exit the facility. In most cases, access would occur directly from existing ramps, adjacent streets or paved areas due to the urban location of the facilities. In other cases, access will be taken from short, dirt- or- paved driveways from nearby public streets.

Access into a facility for maintenance may occur in several ways depending on the maintenance methodology and type of equipment used. In many cases, concrete or temporary earthen ramps would be used by equipment and foot-traffic to gain access into the facility. In other cases, equipment would operate outside the facility along its banks. All access routes would incorporate BMPs during and after maintenance activities. Impacts to upland and wetland habitat would be mitigated in accordance with the MMRP from the PEIR.

Staging and Stockpiling

Maintenance operations that remove a large volume of soils may utilize the stockpile sites depicted on the maps in Appendix A of the Master Program. When necessary, stockpile sites would be used for dewatering and processing of spoils prior to transport. Processing would include removal of tires, large rocks, trash, and other debris. BMPs identified in Chapter 4.0 of this Master Program would be installed, inspected and maintained around the perimeter of stockpile sites. Appropriate permits from the RWQCB would be acquired for stockpile areas.

Staging areas, illustrated on the maps in Appendix A of the Master Program, would be used to store equipment and materials during maintenance operations. Typically, staging areas are located in secured, paved or developed areas such as existing parking lots or the street right-of-way.

Runoff Control

Although maintenance activities within the channel facilities will typically occur in relatively dry conditions, a few storm water facilities, such as Sorrento Creek, carry sufficient amounts of urban runoff during the dry months to preclude or limit maintenance activities. In those few cases, temporary runoff control may be necessary to isolate a segment from upstream water flows. If storm water flows in the area of maintenance cannot be contained by simple best management practices (BMPs) temporary coffer-dams or diversion in a by-pass pipeline may be required. Cofferdams may consist of a combination of water bladders, sand bags, straw bales, and other materials. Depending upon the flow within the storm water facility, water may be pumped around the work area in a pipe. Unless removal would result in more environmental impact than leaving them in place, temporary runoff control features implemented during maintenance will be removed upon completion of the maintenance.

3.3.2 Annual Maintenance Process

Maintenance pursuant to the Master Program would be conducted on an annual basis. As a result of biological and weather constraints, it is anticipated that maintenance would primarily occur during the summer and early fall. The overall maintenance process is summarized below and then described in more detail.

As indicated earlier, the SWD would place specific storm water facilities on an Annual Maintenance Priority List. The facilities on this list would be subject to a number of individual assessments (e.g. biology, cultural, hydrology and water quality). Based on the results of these studies, SWD would develop an Individual Maintenance Plan (IMP) for each maintenance activity.

Once the IMPs have been prepared, they would be submitted along with the supporting technical studies to the City of San Diego Development Services Department (DSD) for a Substantial Conformance Review (SCR). In the course of the SCR process, DSD would review the PEIR for the Master Program to determine whether the activities were included in the Master Program and whether the impacts of the proposed maintenance were assumed in the PEIR impact and mitigation analysis. The DSD would also confirm that mitigation is included pursuant to the requirements of the Mitigation Monitoring and Reporting Program (MMRP) associated with the PEIR.

If the SCR process concludes that the maintenance activity and associated impacts were adequately analyzed in the PEIR, City staff would make the decision whether or not the proposed maintenance could proceed in accordance with the Master Site Development Permit and Coastal Development Permit (SDP/CDP) issued for the Master Program. If the SCR process determines that the maintenance was not adequately addressed in the PEIR and/or Master SDP/CDP, the Planning Commission would be the decision-maker through the City's Process Four.

Once the maintenance activities have been approved by the City as well as the state and federal agencies with jurisdiction over wetlands occurring within maintenance facilities, SWD would commence maintenance. At least 72 hours before starting any maintenance, the SWD will notify the managing City department and land owner. Where sensitive biological or cultural resources are present in the vicinity of the maintenance, a pre-maintenance meeting would be held with technical specialists to review measures required to protect these resources.

Post-maintenance biological and cultural surveys would be conducted, as necessary, to confirm that the actual impacts from maintenance reflected the impact assumptions made based on the IMPs. Based on the impacts from maintenance, SWD would undertake the appropriate mitigation measures in accordance with the MMRP and applicable protocols identified in the Master Program.

On an annual basis, SWD will prepare an annual maintenance monitoring report to document the maintenance activities and mitigation measures which took place in the preceding year.

Individual Assessments

Once the priority storm water facilities have been identified, the SWD would conduct the following individual technical assessments for each of the facilities:

- Individual Hydrology and Hydraulic Assessment (IHHA)
- Individual Biological Assessment (IBA)
- Individual Historical Assessment (IHA)
- Individual Water Quality Assessment (IWQA)
- Individual Noise Assessment (INA)

The biology and historical studies would start with the identification of sensitive resources for consideration during the preparation of the maintenance plan for each facility. The noise studies would identify the potential for heavy equipment noise to disrupt the breeding behavior of nearby sensitive bird species. However, the hydrology/hydraulic study would be the most critical of all of the studies. The focus of this analysis would be on identifying the minimum amount of sediment and vegetation removal necessary to allow a storm water facility to effectively convey flood water. Through this process, the impact on biological and cultural resources as well as the overall amount of maintenance would be minimized.

Individual Hydrologic and Hydraulic Assessment

A qualified hydrologist would assess the ability of the affected storm water facility to convey storm water in its present state using Hydrologic Engineering Center (HEC) or comparable computer modeling software. Based on this analysis, the hydrologist would identify the minimum amount of sediment and/or vegetation that must be removed to provide effective flood conveyance. Wherever possible, the hydrologist would identify areas of native vegetation that may remain within the affected storm water facility.

An IHHA, using the form in Appendix F of the Master Program included as Appendix B to this EIR, would be prepared for each facility. The IHHA would specifically determine whether vegetation within the storm water facility can be retained without substantially interfering with the conveyance of flood waters. It would also determine if any structures or actions are required to maintain water quality or control erosion during or after maintenance.

The IHHA would include the following components:

- Description of the existing conditions within the storm water facility;
- Hydrologic information including summary of flow rates and return frequencies;
- Description of hydraulic models created for analysis of the storm water facility;
- Capacity of the facility to convey varying flood events in both the current state and fully vegetated state;
- Capacity of the facility based on two maintenance scenarios (vegetation removal only and vegetation and sediment removal); and
- Recommendations to be utilized in the maintenance to maximize flood control while, whenever possible, minimizing vegetation removal.

Individual Biological Assessment

The site of each proposed maintenance activity, including access routes, temporary spoils storage and staging areas would be inspected by a qualified biologist to determine whether sensitive biological resources could be affected by the proposed maintenance. Upon completion of this inspection, the biologist would identify significant biological resources and discuss potential ways to avoid impacts in accordance with the measures identified in the MMRP and Master Program protocols. Once a maintenance plan has been completed, the biologist would determine the potential impact of the proposed maintenance on significant biological resources and define mitigation in accordance with the approved MMRP needed to adequately mitigate for those impacts.

An IBA, using the form in Appendix G of the Master Program included as Appendix B to this EIR, would be prepared for each storm water facility where the biologist determines that the proposed maintenance could affect sensitive biological resources. The IBA would include: a summary of the biological resources associated with the storm water facility, quantification of impacts to sensitive biological resources, and the nature of mitigation measures required to mitigate for those impacts. The IBA would also identify which Master Program maintenance protocols and PEIR mitigation measures from the adopted MMRP would be incorporated into the proposed maintenance activity.

The IBA would include the following components:

- Description of maintenance to be performed including length, width and depth;
- Protocol surveys, as needed;
- Scaled map of the affected storm water facility illustrating MHPA boundaries and pre-maintenance vegetation including wetland boundaries based on evaluation of above-ground indicators of the resources; excavation of soil pits, and completion of Corps jurisdictional wetland delineation data forms;
- Location of sensitive species;
- Quantification of impacts to all sensitive biological resources;
- Two, digital, date-stamped photos of the affected area;
- Specific maintenance protocols from the Master Program to be implemented as part of the IMP;
- Identification of any biological monitoring required during maintenance; and
- Specific mitigation from the adopted MMRP that would be required to mitigate impacts to biological resources (e.g., wetland creation/enhancement/restoration or offsite upland habitat acquisition).

Individual Historical Assessment

Before preparation of an IMP, each proposed maintenance activity, including access routes and staging areas, would be evaluated by a qualified archaeologist to determine the potential for cultural resources to be impacted by maintenance. If the archaeologist concludes that there is a moderate to high potential for significant cultural resources to be impacted, the archaeologist

would conduct a foot survey of the maintenance area to determine whether historic or prehistoric resources could be impacted by the proposed maintenance. Upon completion of this inspection, the archaeologist would identify significant historical resources and discuss potential ways to reduce impacts to those resources with SWD staff responsible for preparing the maintenance. Once a maintenance plan has been completed, the archaeologist would determine the potential impact of the proposed maintenance on significant historical resources and identify mitigation needed to adequately mitigate for those impacts from the adopted MMRP.

An IHA, using the form in Appendix E of the Master Program included as Appendix B to this EIR, would be prepared for each storm water facility that the archaeologist determines to have a moderate to high potential for significant historical resources. The IHA would include: a description of the potential historical resources and the mitigation measures needed to reduce adverse impacts. If a moderate to high potential for significant historical resources is determined to exist, additional assessments would be done which includes the following:

- Records search;
- Field reconnaissance (survey) with Native American participation;
- Description of historic resources present within the maintenance area;
- Description of potential impacts to significant historic resources from maintenance; and
- Identification of protection and/or mitigation of affected resources from the MMRP.

Individual Water Quality Assessment

An IWQA would be completed prior to finalizing the IMP for each proposed maintenance activity. The report would be completed under the direct supervision of a professional civil engineer, with current California registration.

The primary function of the IWQA is to identify the level of pollutants within the segment proposed for maintenance. This baseline information would be used to compare the water quality benefits resulting from removal of sediments and plants, which have sequestered pollutants, against the potential loss of the potential for removed sediment and/or vegetation to retain pollutants. This information would also be used to develop any specific plans needed to protect workers from exposure to unsafe levels of hazardous materials. A description of the methodology developed to compare maintenance impacts and benefits is included in Subchapter 4.8, Water Quality.

A template for the IWQA is located in Appendix G of the Master Program, included as Appendix B to this PEIR. In general, the IWQA would include the following components:

- Identification of the existing geometry of the storm water facility including length, width and depth as well as surface flow and volume characteristics;
- Identification of vegetation and sediment characteristics;
- Sediment sampling;
- Water sampling;
- Benefit/impact calculations; and
- Mitigation, as warranted.

One sediment sample would be taken for every 1,000 cubic yards to be removed. The samples would be hand-dug and include a minimum of two cubic feet of material. Each sample would be tested for the constituents identified in Table A-3 of Standard Operating Procedure included as Appendix G of Appendix B of this PEIR. Physical and inorganic non-metals which would be tested include total dissolved solids, phosphorus, nitrate, nitrite and nitrogen. Organics testing would include diazinon, chlorpyrifos, and malathion. Total metal testing would include antimony, arsenic, cadmium, chromium, copper, lead, manganese, nickel, selenium and zinc.

Water samples would be collected from the horizontal and vertical center of the channel, whenever possible. One sampling location would be located at the upstream edge of the storm water facility proposed to be maintained. A second location would be located at the downstream edge of the storm water facility to be maintained. This second sample location would provide a means to compare the upstream and downstream water quality, or the actual pollutant removal capacity under the conditions (flow, vegetation, etc.) present during sampling. The list of constituents to be tested would be the same as for the sediment samples. However, the list may be modified depending on the reported water quality issues, results of the sediment samples and State §303d listings for the subject receiving water segment.

Individual Noise Assessment

A baseline noise survey would be conducted by a qualified acoustician for any maintenance that could impact a sensitive bird species, as determined by a qualified biologist. This survey would determine the ambient noise levels and the 60 A-weighted decibel (dBA) time-averaged, one-hour equivalent level (L_{eq}) noise contour from equipment operations in relation to sensitive bird habitat. Based on the results, the acoustician would identify the extent that noise could impact sensitive species, and identify measures from the MMRP to reduce noise impacts during the designated breeding seasons for potentially affected species. These measures would include noise attenuation barriers, equipment noise reducers and/or restrictions on the timing of maintenance.

An INA, using the form in Appendix H of the Master Program included as Appendix B to this EIR, would be prepared for each storm water facility where noise could impact sensitive species.

The INA would include the following components:

- Baseline noise survey to determine the ambient noise levels;
- Location of 60 dBA L_{eq} noise contour in relationship to bird habitat; and
- Mitigation measures from the MMRP for maintenance during a sensitive bird's breeding season.

Individual Maintenance Plan

Once the individual assessments have been completed, an IMP would be prepared for each maintenance activity. The IMP would be based on the findings and recommendations disclosed in the site-specific technical assessments. The IMP would be signed by the hydrology engineer

responsible for the preparation of the IHHA to confirm that the IMP is an accurate reflection of the IHHA.

The IMP would also identify the maintenance BMPs required to reduce impacts to water quality during and after maintenance, and applicable protocols defined in the Master Program. The goal of the IMP would be to visually illustrate the findings and recommendations of the individual assessments. Maintenance crews and technical staff would use the IMPs to direct and limit maintenance activities within the appropriate work areas.

Maintenance Authorization

The SCR process would be used to authorize maintenance activities which are proposed in SWD's annual maintenance plan. The annual plan would identify each storm water facility that SWD intends to maintain in the coming year. An SCR may also be completed for individual maintenance activities not included in an annual plan.

To initiate the SCR process, SWD would submit a general application (Form DS-3032) along with the SCR checklist included in Appendix B to DSD. In addition the general application and a copy of each IMP, SWD would provide copies of the following individual assessments: IHHA, IBA, IHA, IWQA and INA.

During the SCR process, DSD would review the application, technical studies, the Master SDP/CDP, and the PEIR. Based on this review, DSD would determine if the proposed maintenance would occur in a facility explicitly included in the Master Program and Master SDP/CDP. In addition, DSD would determine whether the impacts of the maintenance were sufficiently analyzed in the PEIR.

Maintenance Activities Included in the Master Program Where Impacts Are Adequately Addressed in the PEIR

If DSD determines that the proposed maintenance activities were included in the Master Program, and adequately addressed in the PEIR, DSD would review maintenance activities for substantial conformation through Process One or Two, in accordance with LDC Sections 112.0502 or 112.0503, respectively. Whether Process One or Two applies would be based on whether the maintenance would occur within the Coastal Zone. If the maintenance would not occur within the Coastal Zone, the City would use Process One. If the maintenance would be in the Coastal Zone, Process Two would be used.

Process One

Process One would be used to authorize maintenance when the SCR review identifies that the proposed maintenance activities would occur in one of the storm water facilities explicitly identified in the Master Program, Master SDP/CDP and PEIR, and the following conditions apply:

1. The maintenance activity is located outside the Coastal Zone;
2. The biological resources which would be impacted by the proposed maintenance would not exceed the impacts assumed in the PEIR; and
3. The applicable mitigation measures identified in the MMRP contained in the PEIR as well as the applicable protocols identified in this Master Program have been incorporated into the IMP.

Process Two

Process Two would be used to authorize maintenance when the SCR review identifies that all the conditions associated with Process One are met but the maintenance would occur within the Coastal Zone.

Maintenance Activities Not Included in the Master Program or Adequately Addressed in the PEIR

If a maintenance activity is proposed for a storm water facility not included in the Master Program, Master SDP/CDP, or is not adequately addressed in the PEIR, the authorization would require a new or amended permit in accordance with Section 126.0113 of the LDC.

State and Federal Agency Review

Concurrent with the City's SCR process, the SWD would also submit appropriate applications and supporting documentation to the California Department of Fish and Game (CDFG), California Regional Water Quality Control Board (RWQCB), and U.S. Army Corps of Engineers (Corps) for approval under the terms of their respective wetland permits. The agencies would review the application and supporting documentation to determine whether the proposed maintenance activities would be consistent with the terms and conditions of their permits. The City would not conduct any proposed maintenance without prior approval from the state or federal agency with jurisdiction over the affected resources.

Maintenance Implementation

After securing the necessary SCR determination or new or amended permits, the maintenance activities would occur in the following manner.

Storm Water Facility and Access Route Field Delineation

Designated access routes would be field marked per the IMP. When mandated by the IBA or IHA, a qualified biologist or archaeologist would delineate with orange fencing, or the equivalent, sensitive resource areas to be avoided. The qualified biologist/archaeologist would check for any substantial change in site conditions from those shown on the IMP and have the authority to refine the access routes and maintenance methods, whenever possible, to avoid or reduce impacts to sensitive resources.

Sensitive Biological Resource Protection

At least 72 hours prior to initiating any clearing or grubbing activities which may adversely affect a sensitive biological resource, a qualified biologist would conduct any necessary pre-maintenance surveys, including bird nest surveys to provide for compliance with the Migratory Bird Treaty Act (16 U.S.C. §§703 *et seq.* [MBTA]) and Biological Resources Mitigation Measure 4.3.16.

Historical Resource Mitigation

If historical resources were identified during the IHA, a qualified archaeologist would undertake any monitoring and/or mitigation measures identified in the MMRP in consultation with DSD.

Weed/Erosion Control

Weeds would be removed from access areas to prevent introduction of invasive species. Areas would be monitored by the SWD staff during routine inspections.

Waste Management

All debris accumulated during the maintenance process would be removed from the site within one week of the end of maintenance using the appropriate waste removal procedure (e.g., vacuum/pressure truck, dump truck, etc.), and disposed of at an appropriate off-site location.

Site Close-out

Following completion of the maintenance activities and removal of all spoils and equipment, site close-out activities would, as appropriate, include: installation of erosion control devices such as straw wattles, geotextile blankets/nets, and/or hydroseed; implementation of on-site wetland/streambed restoration measures required by the PEIR; and/or securing site from public access.

Maintenance Reporting

On an annual basis, SWD will document the maintenance activities and mitigation measures which took place in the preceding year. During review of the original PEIR, the Community Planners Committee (CPC) made a recommendation that the SWD make a presentation of the

previous year maintenance activities to the City Council Land Use and Housing Committee (LU&H). However, the appropriate council committee for review and oversight of this public program is the Natural Resources and Culture Committee (NR&C), which is responsible for providing policy direction to City departments on public projects that may affect clean water, endangered species, the MSCP, or open space (Permanent Rule 6.11.3 for the NR&C). Therefore, to meet the intent of the CPC recommendation, a presentation regarding the previous year of maintenance would be made on an annual basis to the NR&C and the CPC. In this presentation, SWD would also outline the maintenance planned to be carried out in the coming year. This same information will be provided to the appropriate state and federal agencies and included as an attachment to the City's MSCP Annual Report.

With respect to the past year of maintenance, the annual report would include the following:

- Tabular summary of the acreage of sensitive vegetation impacted at each facility that was maintained and the mitigation provided;
- Scaled map of each affected storm water facility illustrating pre- and post-maintenance vegetation;
- Updated master storm water facility list to reflect the facilities for which impacts have been mitigated and, for which, no additional mitigation would be required;
- Summary of the status of mitigation which has been carried out during the current and previous years to mitigate for impacts to upland and wetland vegetation, as well as sensitive species;
- Two digital, date-stamped photographs of each of the areas that were maintained in the current year; and
- Description of any remedial actions and the outcome of their implementation for each affected storm water facility.

With respect to the coming year of maintenance, the annual report would include the following:

- A list of all of the storm water facilities anticipated to be maintained; and
- A preliminary estimate of sensitive biological and/or cultural resources to be impacted with each maintenance activity and mitigation, pursuant to the MMRP, required to mitigate for anticipated impacts.

3.4 DISCRETIONARY ACTIONS

3.4.1 City Permits

A Master SDP/CDP would be required to carry out maintenance activities identified in the Master Program.

3.4.2 Non-City Permits

Under the state and federal regulations, maintenance activities that could impact wetland habitat and/or species protected by state and federal endangered species acts would require one or more of the following permits or approvals.

404 Permit

Under Section 404 (33 U.S.C. § 1344) of the federal Clean Water Act (33 U.S.C. §§ 1251 *et seq.* [CWA]), a permit issued by the Corps would be required for maintenance proposals that would affect “waters of the United States”. The City is proposing to obtain an Individual 404 Permit under which it would conduct future maintenance activities pursuant to the proposed Master Program.

401 Certification

A Section 401 Water Quality Certification issued by the RWQCB would be required for all maintenance proposals within waters of the U.S. The City is proposing to obtain a series of four-year 401 Certifications under which it would conduct future maintenance activities pursuant to the proposed Master Program.

1605 Streambed Alteration Agreement

A Section 1605 Streambed Alteration Agreement issued by CDFG would be required for maintenance proposals that would impact streambeds. The City is proposing to obtain a Master 1605 Streambed Alteration Agreement under which it would conduct future maintenance activities pursuant to the proposed Master Maintenance Program.

National Pollutant Discharge Elimination System Permit

A Section 402 (33 U.S.C. § 1342) NPDES Permit issued by the RWQCB, and/or compliance with the state General Permit for Construction Activities may be required to conduct maintenance when water quality impacts could occur during maintenance.

Wastewater Discharge Regulations

Wastewater Discharge Regulations (WDRs) could be required from the RWQCB whenever dewatering would occur as part of a maintenance activity. Dewatering is necessary when water within the storm water facility must be removed so that maintenance may be accomplished

Coastal Development Permit

A CDP issued by the California Coastal Commission would be required for maintenance within the Coastal Commission Permit jurisdiction and the Deferred Certification Areas of the Coastal Zone.

3.5 HISTORY OF PROJECT CHANGES

This section is intended to chronicle changes that have occurred in the proposed storm water system maintenance program since the original NOP was circulated in 2005. In the NOP, the project was focused on obtaining master permits from the various state and federal agencies with

jurisdiction over natural resources associated with the storm water facilities included in the maintenance program. At that time, the maintenance was expected to occur within 350 different storm water facilities. While the primary objective has not changed from that envisioned in the 2005 NOP, the number of facilities to be included in permits have been reduced to 115, and more specific documentation has been developed to govern the maintenance process.

Subsequent to the circulation of the NOP, SWD defined additional storm water facilities that were within its responsibility and included them in the proposed maintenance. In addition, SWD prepared a Master Program document that provided more detailed information on the proposed maintenance activities. The original Master Program document included a detailed description of the various forms of maintenance activities traditionally carried out by the SWD, and the type of equipment normally associated with each. To provide more proactive guidance to maintenance activities, the original Master Program included a series of maintenance protocols to reduce the effects of maintenance on the storm water facilities (e.g. erosion/sedimentation and disruption of biological resources). In response to suggestions made by the resource agencies and conservation groups, the original Master Program required detailed hydrology and hydraulic assessments of each storm water facility prior to commencing maintenance. The hydrology/hydraulic assessment was required to provide specific recommendations with respect to the amount of vegetation and sediment required to be removed to achieve desired flood protection. In addition, the hydrology/hydraulic assessment was required to identify the minimum amount of vegetation required to be removed to maximize a facility's ability to convey floodwater.

Based on the modified Master Program, a Draft PEIR was prepared and circulated for public review between July 9 and August 24, 2009. During this review period, a total of 29 comment letters were received from a variety of sources including state and federal agencies, conservation groups and interested citizens.

Subsequent to the original public review period for the PEIR, SWD met with conservation groups including Coastkeeper, Audubon Society, and San Diego Canyonlands. A series of meetings were held, including a field trip put together by these groups to illustrate their concerns and suggestions.

At the request of these groups, SWD incorporated a number of modifications to the original Master Program. Most notably, SWD reduced the number of storm water facilities included in the Master Program to eliminate drainages in natural open space that are not expected to require maintenance. The modified Master Program covers approximately 32 rather than 50 miles of facilities. The Master Program was also modified to require individual water quality assessments be conducted prior to maintenance to identify any potential for water quality impacts and the measures to be taken to minimize the potential for downstream impacts.

The comments received during the original public review period raised a number of concerns about the proposed maintenance activities and requested additional information regarding potential impacts and proposed mitigation measures. A brief summary of some of the major issues, and the modifications in the Master Program and/or the Recirculated PEIR follows. The

entire comment letters and City responses from the public review period for the original PEIR are included in Appendix A.2.

A number of comments expressed the belief that the City should conduct hydrology/hydraulic studies as part of the Master Program preparation to better determine which facilities require maintenance and to what degree. The City continues to believe that doing hydrology studies in advance for all of the storm water facilities included in the Master Program is infeasible because the studies would have a short shelf-life as a result of constantly changing conditions within each storm water facility. However, the City has included a requirement to the Master Program that mandates an IHHA be prepared by a registered hydrologist before conducting any maintenance activity. The IHHA must be based on recognized engineering methods, and be designed to determine the minimum amount of vegetation and sediment removal needed to maximize the ability of the storm water facility to convey floodwater. The hydrologist must coordinate with a biologist to identify wetland vegetation (e.g. trees) that may be left in the facility without jeopardizing efficient floodwater conveyance. The hydrologist is also required to determine if maintenance could affect downstream areas by increased risk of sedimentation or transport of water pollutants. When a potential risk is identified, the IHHA must specify a downstream structure to minimize this risk.

A number of concerns were also expressed regarding the water quality analysis in the original PEIR. The City retained the services of Weston Solutions to conduct an extensive literature review and prepare a technical paper addressing the potential effects that maintenance may have on water quality in local drainages. Weston Solutions was also asked to find a methodology to evaluate potential impacts of storm water maintenance on water quality and identify measures available to reduce potential water quality impacts. The technical paper is included in the appendices of this EIR and summarized in Subchapter 4.8. As a review of this study indicates, storm water facility maintenance has both negative and positive effects with respect to water quality.

In response to public concern that the access routes weren't adequately defined in the original Master Program, the City has identified specific access routes, stockpiling, and staging areas for each of the storm water facilities included in the revised Master Program to allow the PEIR to assess potential impacts associated with access, stockpiling, and staging areas.

Several comments were received expressing concern that the conservative approach to estimating wetland impacts would mean that all subsequent maintenance would fall within the assumptions of the PEIR and provide no incentive for minimizing the amount of vegetation removed. Based on the prototype IHHAs prepared for some of the more problematic storm water facilities included in the Master Program, it was determined that in most cases, vegetation removal could be limited to the bottom areas of the facilities. Unless channels were narrow (e.g. less than 20 feet), the IHHAs concluded that there would only be a minimal increase in floodwater conveyance capacity achieved by removing vegetation on the banks. In light of the minimal benefit, combined with the additional cost of removing vegetation on the banks and the resulting additional mitigation cost, the impact area assumed in this EIR is based on the channel bottom plus two feet unless the channel is less than 20 feet wide.

A new alternative (see Section 7.6) has been added to the EIR to discuss the potential benefits of applying Low Impact Development (LID) techniques within the watersheds of the storm water facilities in an effort to reduce the need for maintenance.

The project objectives stated in this EIR have also been modified to remove the contradictory statements related to balancing storm water maintenance with biological resources. The objectives now clearly state that the primary objective of the Master Program is to facilitate maintenance of storm water facilities and fulfill the mandate of City's Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk. The Master Program protocols have been revised to ensure that measures incorporated into each individual maintenance activity would protect and minimize potential effects to environmental resources such as water quality and biological resources.

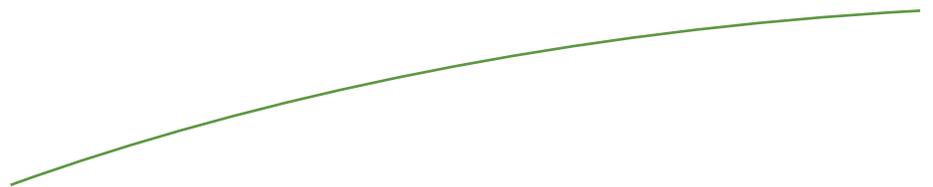
The discussion of cumulative impacts has been modified to be consistent with the conclusions of the City's General Plan PEIR which was certified in 2008. The City continues to believe that a cumulative analysis based on the PEIR is appropriate in lieu of a specific list of projects.

The Master Program has been revised to rely on the Substantial Conformance Review (SCR) process in the LDC used by the City to authorize development maintenance activities to proceed when minor changes have occurred in a development project that has received prior approval. the proposed maintenance activities are in conformance with the Master SDP/CDP, PEIR and MMRP.

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Chapter 4.0
ENVIRONMENTAL ANALYSIS



CHAPTER 4.0 – ENVIRONMENTAL ANALYSIS

4.1 LAND USE

4.1.1 Existing Conditions

Existing Land Use Setting

The storm water facilities included in the Master Program occur in various land use contexts. The affected storm water facilities are generally surrounded by residential or commercial uses. However, in some cases, the facilities are located in urban canyons which provide a greater degree of separation between the facilities and the adjacent development. Configuration types in both urban and canyon areas varies from all concrete channels; concrete-sided channels with earthen bottoms; or earthen channel with rock revetment slopes, to natural drainage channels.

Relevant Planning Documents

City of San Diego General, Community, Park/Preserve and Other Plans

Land use regulations are guided by the City’s General Plan. The General Plan provides overall land use goals, objectives and recommendations for the entire City. The City’s General Plan contains a Strategic Framework section and ten elements: Land Use and Community Planning; Mobility; Urban Design; Economic Prosperity; Public Facilities, Services and Safety Element; Recreation; Conservation; Historic Preservation; Noise; and Housing. The applicable goals and recommendations within relevant elements pertaining to the Master Program are summarized below.

Land Use and Community Planning Element

The purpose of the Land Use and Community Planning Element (Land Use Element) is “to guide future growth and development into a sustainable citywide development pattern, while maintaining or enhancing quality of life in our communities.” The Land Use Element addresses land use issues that apply to the City, as a whole, and identifies the community planning program as the mechanism to designate land uses, identify site-specific recommendations, and refine city-wide policies as needed. The Land Use Element establishes a structure that respects the diversity of each community and includes policies that govern the preparation of community plans. The Land Use Element addresses zoning and policy consistency, the plan amendment process, airport-land use planning, annexation policies, balanced communities, equitable development, and environmental justice.

Urban Design Element

The purpose of the Urban Design Element is “to guide physical development toward a desired image that is consistent with the social, economic and aesthetic values of the City.” The Element’s policies capitalize on San Diego’s natural beauty and unique neighborhoods by calling for development that respects the natural setting, enhances the distinctiveness of its

neighborhoods, strengthens the natural and built linkages, and creates mixed-use, walkable villages throughout the City. Urban Design Element policies help support and implement land use and transportation decisions, encourage economic revitalization, and improve the quality of life in San Diego. Ultimately, the Urban Design Element influences the implementation of all of the General Plan's Elements and Community Plans as it sets goals and policies for the pattern and scale of development and the character of the built environment.

Public Facilities, Services, and Safety Element

The purpose of the Public Facilities, Services, and Safety Element (Public Facilities Element) is "to provide the public facilities and services needed to serve the existing population and new growth." This Element contains policies that address public financing strategies, public and developer financing responsibilities, prioritization, and the provision of specific facilities and services that must accompany growth. The policies within the Public Facilities Element also apply to transportation, and park and recreation facilities and services. This Element also provides policies to guide the provision of a wide range of public facilities and services, including fire-rescue, police, wastewater, storm water infrastructure, water infrastructure, waste management, libraries, schools, information infrastructure, public utilities, regional facilities, healthcare services and facilities, disaster preparedness, and seismic safety.

Recreation Element

The purpose of the Recreation Element is "to preserve, protect, acquire, develop, operate, maintain, and enhance public recreation opportunities and facilities throughout the City for all users." The goals and policies of the Recreation Element have been developed to take advantage of the City's natural environment and resources, to build upon existing recreation facilities and services, to help achieve an equitable balance of recreational resources, and to adapt to future recreation needs. The Recreation Element provides policies to guide the City's vision and goals for park and recreation facilities citywide and within individual communities. Recreation Element policies also support joint use and cooperative agreements; protection and enjoyment of the City's canyon-lands; creative methods of providing "equivalent" recreation facilities and infrastructure in constrained areas; and implementation of a financing strategy to better fund park facility development and maintenance.

The City provides three categories of parks and recreation for residents and visitors: population-based, resource-based, and open space. These categories, including land, facilities and programming, constitute San Diego's municipal park and recreation system. Population-based parks are to be provided at a minimum ratio of 2.8 usable acres per 1,000 residents. In recognition of the City's land constraints, it is proposed that some of the 2.8 acres could be satisfied through "equivalencies," which are alternative ways to meet population-based park standards.

Conservation Element

The purpose of the Conservation Element is "to become an international model of sustainable development and conservation. To provide for the long-term conservation and sustainable

management of the rich and natural resources that help define the City's identity, contribute to its economy, and improve its quality of life." The Conservation Element contains policies to guide the conservation of resources that are fundamental components of San Diego's environment, that help define the City's identity, and that are relied upon for continued economic prosperity. San Diego's resources include, but are not limited to: water, land, air, biodiversity, minerals, natural materials, recyclables, topography, viewsheds, and energy. The Element contains policies for sustainable development, preservation of open space and wildlife, management of resources, and other initiatives to protect the public health, safety, and welfare.

Historic Preservation Element

The purpose of the Historic Preservation Element is "to guide the preservation, protection, restoration and rehabilitation of historical and cultural resources and maintain a sense of the City. To improve the quality of the built environment, encourage appreciation for the City's history and culture, maintain the character and identity of communities, and contribute to the City's economic vitality through historic preservation." This Element contains goals and policies designed to integrate effective historic preservation into the larger planning process to achieve greater preservation of historical and cultural resources. The Historic Preservation Element recommends the continuation of existing programs and the development of new approaches as needed. As future growth in San Diego shifts attention from building on open land to a focus on reinvestment in existing communities, there will need to be a continued effort to protect historical and cultural resources.

Community Plans and Park/Preservation Plans

In addition to the General Plan, the City has a number of Community Plans that govern land use within the City as well as Park/Preservation Plans. The goals and objectives of the Community Plans which are related to the proposed Master Program are those associated with conservation and visual quality. These goals would be applicable to those storm water facilities which are located within open space and/or park land use designations and need to be balanced with the goals relating to storm water facilities. The goals and objectives of Park/Preservation Plans are primarily associated with preserving natural resources. A review of the storm water facilities included in the Master Program indicates that storm water facilities would be located within open space and/or park land use designations for the following Community Plans:

- Clairemont Mesa Community Plan;
- College Area Community Plan;
- Encanto Neighborhoods Community Plan;
- Linda Vista Community Plan;
- Mid-City Communities Plan;
- Mira Mesa Community Plan;
- Mission Valley Community Plan;
- Navajo Community Plan;
- Otay Mesa-Nestor Community Plan;
- Pacific Beach Community Plan;
- Peninsula Community Plan;

- Skyline-Paradise Hills Community Plan;
- Southeastern San Diego Community Plan;
- Tijuana River Valley Community Plan; and
- Torrey Pines Community Plan.

Storm water facilities occur in the following Park/Preserve Plans:

- Balboa Park;
- Chollas Creek Enhancement Plan;
- Famosa Slough Enhancement Plan;
- Otay Valley Regional Park Concept Plan; and
- Western Otay Valley Regional Park Natural Resource Management Plan (Draft).

City of San Diego Local Coastal Plan

The City's LCP governs the decisions that determine the short- and long-term conservation and use of the City's coastal resources. The LCP consists of two components: the Land Use Plan (LUP) and the implementing ordinances found in the zoning and land development sections of the Land Development Code. The City of San Diego has elected to divide their coastal zone jurisdictions into twelve segments. Thus, there are 12 LCPs that make up the City's overall LCP. Policies and recommendations that make up the various LCPs are included and incorporated into the community plans and/or other planning documents for the segment areas, as appropriate. The following LCPs and associated community and other planning documents may be affected by, or relevant to, the implementation of the Master Program:

- North City LCP;
- La Jolla/La Jolla Shores LCP;
- Pacific Beach LCP;
- Peninsula LCP;
- Otay Mesa/Nestor LCP; and
- Tijuana River Valley LCP.

All of these LCPs have been certified by the California Coastal Commission (CCC); thus, the City is the governing agency for issuance of CDPs. However, there are some "areas of suspended certification" within various coastal zone segments that await resolution by the Commission. Within these suspended certification areas, the CCC is the governing agency for the issuance of CDPs.

City of San Diego Environmentally Sensitive Lands (ESL) Regulations

The purpose of the ESL Regulations (San Diego Land Development Code, Section 143.0130) is to "protect, preserve and, where damaged, restore the environmentally sensitive lands of San Diego and the viability of the species supported by those lands." The ESL Regulations serve to implement the Multiple Species Conservation Program (MSCP) by placing priority on the preservation of biological resources within the Multi-Habitat Planning Area (MHPA).

Unless specifically exempted, ESL Regulations apply to all proposed development when any of the following environmentally sensitive lands are present on the project area: sensitive biological resources; steep hillsides (defined in part as all lands that have a slope with a natural gradient of 25 percent or greater and a minimum elevation differential of 50 feet); coastal beaches; sensitive coastal bluffs; and 100-year floodplains.

All proposed developments subject to ESL Regulations that encroach into environmentally sensitive lands must obtain either a Neighborhood Development Permit (NDP) or a SDP. If development is proposed in the Coastal Overlay Zone, a CDP is also required. Limited exceptions to ESL Regulations apply in certain circumstances.

The ESL Regulations govern development for each type of sensitive land (sensitive biological resources, steep hillsides, coastal beaches, etc.). Outside the Coastal Overlay Zone, City linear utility projects, such as the proposed Master Program, are exempt from the development area regulations for steep hillsides and sensitive biological resources. In addition, Section 143.0111(i) of the ESL Regulations specifically exempts public maintenance access associated with the proposed project from limits on encroachment into steep hillsides and sensitive biological resources. Within the Coastal Overlay Zone, the ESL Regulations generally establish a 25 percent allowable development area in steep hillside areas, although development of up to 40 percent is permitted under certain circumstances for certain types of development, including public utility systems.

The ESL Regulations require impacts to wetlands be avoided unless the activities meet specific exemption criteria established in the ordinance. Impacts to City-defined wetlands require approval of deviation findings. For projects occurring within wetlands in the Coastal Overlay Zone, uses are limited to those uses identified in Section 143.0130(d). These uses are limited to aquaculture, nature study projects or similar resource dependent uses, wetland restoration projects, and incidental public service projects. Impacts to wetlands should only occur if they are unavoidable, have been minimized to the greatest degree possible, and have adequate mitigation. Wetlands must be mitigated in accordance with Section III(B)(1)(a) of the City's Land Development Manual Biology Guidelines. Additionally, the ESL Regulations for projects occurring within the Coastal Overlay Zone require a 100-foot buffer to be maintained around all wetlands, as appropriate, to protect the functions and values of the wetland. A lesser or greater buffer may be warranted based on consultation with the resources agencies (i.e., Corps, and the CDFG). The exemption for public maintenance access impacts to steep slopes and biological resources applies in the Coastal Overly Zone.

Plans submitted in accordance with the ESL Regulations shall, to the maximum extent feasible, comply with the various ESL Regulations. If a proposed development does not comply with all applicable development regulations of the ESL, the decision-maker may approve, conditionally approve, or deny the proposed SDP, subject to the decision-maker making findings in accordance with Section 126.0504 of the Land Development Code for deviations from the ESL regulations.

City of San Diego Historical Resources Regulations

The purpose of the Historical Resources Regulations (LDC Section 143.0200) is to “protect, preserve, and, where damaged, restore the historical resources of San Diego, which include historical buildings, historical structures or historical objects, important archaeological sites, historical districts, historical landscapes, and traditional cultural properties.”

Minor alteration of a designated historic resource may be permitted if it would not adversely affect the special character or special historical, architectural, archaeological or cultural value of the resource and would be consistent with the Secretary of the Interior’s Standards for Rehabilitation (Rehabilitation Standards) and Illustrated Guidelines for Rehabilitating Historic Buildings (Guidelines). A Construction Permit is required for any development on a premise that has historical resources on a site that would not adversely affect the historical resources and is consistent with one or more of the exemption criteria outlined in the regulations. A SDP is required for certain development proposals that do not qualify for an exemption in accordance with the regulations.

Important archaeological sites generally are to be conserved, except in cases when impacts are necessary to achieve a reasonable development area, with up to 25 percent encroachment into any important archaeological site allowed. Any encroachment into important archaeological sites is required to include measures to mitigate for the partial loss of the resource as a condition of approval. The mitigation is required to include preservation through avoidance of the remaining portion of the important archaeological site, and implementation of a research design and data recovery program that recovers the scientific value of the portion of the site that would be impacted. If a proposed development cannot, to the maximum extent feasible, comply with the Historical Resources Regulations (HRG), a deviation may be granted subject to the decision-maker making findings in accordance with Section 126.0504 of the Land Development Code.

City of San Diego Multiple Species Conservation Program Subarea Plan

The MSCP is a comprehensive habitat conservation planning program for southwestern San Diego County. A goal of the MSCP is to preserve a network of habitat and open space, and protecting biodiversity by conserving covered species. The MSCP also is intended to provide an economic benefit by providing certainty for future development, and decreasing the costs of compliance with federal and state laws protecting biological resources by streamlining permit procedures for development projects which impact habitat. Local jurisdictions, including the City, implement their portions of the MSCP Plan through subarea plans.

The City’s MSCP Subarea Plan is a plan and process for the issuance of permits under the federal and state Endangered Species Act and the California NCCP Act of 1991. The primary goal of the MSCP Subarea Plan is to conserve viable populations of sensitive species and to conserve regional biodiversity. In July 1997, the City signed an Implementing Agreement with USFWS and CDFG. The Implementing Agreement serves as a binding contract between the City, USFWS and CDFG that identifies the roles and responsibilities of the parties to implement the MSCP and Subarea Plan. The Agreement became effective on July 17, 1997, and allows the City to issue Incidental Take Authorizations under the provisions of the MSCP. Applicable state

and federal permits would still be required for wetlands and listed species that are not covered by the MSCP. In addition, because the Corps was not a signatory agency to the MSCP, any projects requiring a Section 404 Clean Water Act permit from the Corps also require a USFWS Section 7 Consultation, if listed species may be impacted, regardless of whether they are considered covered species under the MSCP.

Under the Federal Endangered Species Act (FESA), an incidental take permit is required when non-Federal activities would result in "take" of the threatened or endangered species. A Habitat Conservation Plan (HCP) must accompany an application for Federal Incidental Take Permit (ITP). Take authorization for federally listed wildlife species covered in the HCP shall generally be effective upon approval of the HCP.

As of the date of surrender, April 20, 2010, the City has relinquished coverage and does not rely on the City's Federal ITP to authorize an incidental take of the two vernal pool animal species and five vernal pool plant species. Upon completion of a Habitat Conservation Plan (HCP) for vernal pools, the City would enter into an Implementing Agreement in order to obtain species coverage and a Federal ITP for the seven vernal pool species

The MSCP identifies a 56,831-acre MHPA in the City for preservation of core biological resource areas and corridors targeted for preservation. Portions of the storm water facilities to be maintained occur within the MHPA.

Water Quality Regulatory Framework

The regulatory framework for water quality includes the CWA, which established the NPDES permit program to regulate the discharge of pollutants from industrial, commercial and institutional processes, and point sources to waters of the United States, and the Porter-Cologne Water Quality Act and the Federal Water Pollution Control Act Amendments of 1972, which require that Water Quality Control Plans (Basin Plans) be prepared for the nine state-designated hydrologic basins in California, including the San Diego Region basin. The water quality regulatory framework is more fully described in Subchapter 4.8, Water Quality. As indicated in Subchapter 4.8, the City has prepared a Jurisdictional Urban Runoff Management Plan (JURMP), and the Standard Urban Stormwater Mitigation Plan (SUSMP), in accordance with requirements of the State Water Resources Control Board NPDES permit procedure. These documents address the process that the City would undertake to improve water quality. In addition to the JURMP and SUSMP, protection of surface water quality is also provided through the NPDES General Construction Permit and General Industrial Permit for the State of California.

4.1.2 Impacts

Significance Criteria

The City of San Diego's Significance Determination Thresholds (2011) state that a project may significantly impact land use if it would:

- Conflict or be inconsistent with the environmental goals, objectives or guidelines of a community or general plan; or
- Be inconsistent or conflict with adopted environmental plans for an area.

Analysis of Impacts

Issue 1: Would the Project be inconsistent or conflict with the environmental goals, objectives or guidelines of the General Plan or applicable Community or Park Plan?

The environmental goals, objectives and guidelines from the General Plan which are applicable to the proposed Master Program are associated with the following elements: Public Facilities, Services and Safety Element, Recreation Element and Conservation Element. Although the Community Plans assign different names for these elements and use a wide variety of narrative to express them, the applicable environmental goals, objectives and guidelines identified in the General Plan and various Community Plans can be characterized as follows:

- Maintain natural drainages;
- Minimize disturbance to natural habitat and the wildlife it supports;
- Protect water quality; and
- Create and maintain recreation opportunities associated with natural drainages.

In order to assess the relationship of storm water maintenance to the environmental goals, objectives and guidelines, the following discussion is based on these four over-arching goals and objectives. As indicated earlier, the storm water facilities included in the Master Program are those which generally occur within urban areas where flood control is necessary. As a result, many of the storm water facilities thread their way through highly urbanized areas. However, some of the facilities are located in areas which are located in open space and/or park land use designations of the City's Community Plans. When this occurs, storm water maintenance may relate to the environmental goals, objectives or guidelines of the affected Community Plan. An analysis of the specific applicable General and Community Plan policies is provided in Table 4.1-1 which is contained in Appendix C. Table 4.1-2 identifies those storm water facilities that lie within open space and/or park land use designations by community plan areas.

**Table 4.1-2
 MASTER PROGRAM STORM WATER FACILITIES WITHIN OPEN SPACE AND/OR PARK LAND USE
 DESIGNATIONS BY COMMUNITY PLAN AREA**

Map No.	Community Plan Area	Facility Description	Total Length (linear feet)	Channels in Open Space and Park Land Use Designation (linear feet)			
				Open Space	Park	Total Open Space and Park	Percent of Total Facility (%)
7	Torrey Pines	Los Peñasquitos Channel	1,609	1,609		1,09	100
8		Los Peñasquitos Channel	1,600	1,542		1,548	97
11		Soledad Creek	2,539	2,057		2,057	81
12		Soledad Creek	1,397	1,397		2,487	100
34	Peñasquitos	Rose Creek	1,416	1,346		1,346	95
35		Rose Creek	2,270	1,817		1,817	80
51	Navajo	Red River Dr & Conestoga Dr	875	860		860	98
54	Navajo	San Carlos Channel	957	500		500	52
55	Linda Vista	Tecolote Creek Channel	2,584	286		286	11
56		Tecolote Creek Channel	2,018	1,964	48	2,012	99
57		Tecolote Creek Channel	768	768		768	100
64	College	Alvarado Channel	2,301	1,429		1,429	54
65a	Mid-City	Fairmont Channel	813	577		577	71
65b		Fairmont Channel	848	194		194	23
69		Auburn Creek Channel	2,356	1,263		1,263	54
70		Auburn Creek Channel	1,418	1,167		1,167	82
77		Chollas Creek Channel	422	408		408	97

**Table 4.1-2 (cont.)
 MASTER PROGRAM STORM WATER FACILITIES WITHIN OPEN SPACE AND/OR PARK LAND USE
 DESIGNATIONS BY COMMUNITY PLAN AREA**

Map No.	Community Plan Area	Facility Description	Total Length (linear feet)	Channels in Open Space and Park Land Use Designation (linear feet)			
				Open Space	Park	Total Open Space and Park	Percent of Total Facility (%)
86	Balboa Park	Pershing Channel	2,047	0	2,023	2,023	99
94		South Chollas Creek Channel	2,595	594		594	23
95	Southeastern San Diego	South Chollas Creek Channel	1,604	1,395		1,395	87
97		South Chollas Creek Channel	1,098	771		771	70
98		South Chollas Creek Channel	2,800		162	162	6
103	Encanto	South Chollas Creek Channel	1,237	118		118	10
109		Jamacha Channel	2,390		392	392	16
113	Skyline-Paradise Hills	Jamacha Channel	815	815		815	100
114		Jamacha Channel	2,683	2,614		2,614	97
115		Jamacha Channel	1,886	1,865		1,865	99
131		Nestor Creek Channel	1,201	1,201		1,201	100
132	Otay Mesa-Nestor	Nestor Creek Channel	2,982	436	705	1,141	38
134		Nestor Creek Channel	1,309	1,088		1,088	83
138	Tijuana River	Tijuana River	1,837	1,387		1,387	76
139		Smugglers Gulch Channel	1,031	1,016		1,016	99
145		First San Diego River Improvement Project	3,325	3,209		3,209	97
146		First San Diego River Improvement Project	3,321	3,303		3,303	99
147		First San Diego River Improvement Project	3,369	3,350		3,350	99

Maintain Natural Drainages

Maintenance activities would not alter the configuration of the natural drainage courses included in the Master Program. While the Master Program does provide for removal of accumulated sediment and overgrown vegetation that interfere with conveyance of floodwater, it would not allow any physical modifications of the underlying drainage. Furthermore, the removal of riparian vegetation would not significantly impact the character of the natural drainages. In general, mature trees spaced at least 50 feet apart would be allowed to remain in place during maintenance. Given the fact that typical riparian tree canopy widths have a radius of 10-20 feet, this would allow the appearance of a continuous tree canopy following maintenance which would retain the visual character of these drainages. In addition, as stated in Subchapter 4.3, Biological Resources, the dominant understory vegetation would be expected to re-establish within six to 12 months of maintenance. Thus, the land use policy affect of removing this understory vegetation would be temporary in nature.

Minimize Disturbance To Natural Habitat And The Wildlife It Supports

As discussed in Subchapter 4.3, Biological Resources, maintenance activities would disturb wetland vegetation found within the storm water facilities and the wildlife it supports. Due to the impedance to flood water associated with wetland habitat, achieving the primary goal of the Master Program to control flooding, maintenance is expected to remove portions of wetland vegetation located within storm water facilities included in the Master Program. However, protocols in the Master Program, combined with biological mitigation outlined in Subchapter 4.3, would minimize impacts to natural habitat and wildlife in several ways. First, as discussed in Chapter 3.0, IHHA's would be completed prior to maintenance. A stated objective of these assessments is to minimize the amount of vegetation removal required to improve the ability of a storm water facility to convey flood water. In most cases, it is anticipated that removal of vegetation on the banks of storm water facilities would not be necessary to maximize flood water conveyance. As indicated earlier, trees spaced a minimum of 50 feet apart on the bottom of storm water facilities would remain after maintenance. The retention of mature trees and the ability of understory vegetation to naturally re-establish within a short period of time will help achieve the goal of minimizing impacts to natural habitat and wildlife. Lastly, as discussed in Subchapter 4.3, Biological Resources, impacts to wetland habitat would be mitigated by enhancing, restoring or creating new wetland habitat. Whenever feasible, this mitigation would occur within the same watershed as the impact. This mitigation would further minimize the net impact of maintenance on natural habitat and associated wildlife. Thus, the proposed Master Program would achieve the goal of minimizing disturbance to natural habitat.

Protect Water Quality

As discussed in Subchapter 4.8, Water Quality, maintenance of storm water facilities could adversely affect water quality by reducing the ability of sediment and vegetation within those facilities to remove and retain urban pollutants from surface water. Vegetation and sediment have the ability to remove urban pollutants through absorption and/or adsorption. Absorption refers to the ability of plants to remove pollutants by internalizing the pollutants in the plant tissue. Adsorption refers to the process where pollutants are removed by attaching to the outside

of materials. For example, pollutants attach to the outside surface of sediments through ionic bonding. The removal of sediment and/or vegetation in the course of maintenance would diminish the pollutant removal function of these components until they naturally re-establish between maintenance events. On the other hand, maintenance can improve water quality by eliminating the pollutants that have accumulated in a channel. . Removal of the pollutants retained in sediment and plants would avoid the potential for them to be transported downstream during high runoff flows. Maintenance would also improve water quality by removing illegally dumped materials such as trash, appliances, furniture, shopping carts, and tires.

The potential benefits from maintenance combined with the mitigation measures and Best BMPs required to be applied to maintenance activities which may significantly reduce the natural roles of sediment and vegetation to remove pollutants would avoid any significant conflicts with the planning goals and objectives to protect water quality.

Create And Maintain Recreation Opportunities Associated With Natural Drainages

The Master Program would not interfere with the scenic, natural or cultural resources within resource-based parks. Drainages within resource-based parks are not bordered by development which requires flood control. Thus, these areas are not included in the Master Program.

The Master Program would not alter the natural landforms and would not result in the loss of open space. The configuration and continuity of the drainage system would be unchanged by maintenance activities. No filling or reconfiguration of the storm water facilities would occur as part of the Master Program. Thus, the Master Program would comply with the goal of maintaining natural drainage systems.

The Master Program would not preclude the linkage of canyons and hillsides as part of an overall regional natural open space system. Although biological resource impacts would be mitigated, the compensation would generally occur in the same watershed. Thus, the Master Program would be consistent with this goal related to preserving native vegetation.

Competing interests within a General Plan or Community Plan are not uncommon since these documents address a broad variety of conditions and objectives. Therefore, the following consistency analysis weighs and balances the policies in light of their purpose. Competing interests do not constitute a significant land use policy impact because the Master Program has been designed to conform to the objectives, policies, general land uses, and programs in the General Plan and applicable Community Plans . It is also important to note that the majority of the natural drainages included in the Master Program have been subject to maintenance activities in the past. Furthermore, as discussed in Subchapter 4.3, Biological Resources, wetland vegetation begins to re-establish within six to eight months of a maintenance event which results in restoration of its value to wildlife and its aesthetic value to the surrounding community.

Significance of Impacts

While maintenance would result in the temporary loss of vegetation associated with channels and natural drainages, maintenance would not impact the underlying drainages. Biological

mitigation would be carried out, generally within the same watershed as the maintenance, to mitigate for impacts to wildlife. As necessary, measures would be taken during and after maintenance to protect water quality. Thus, the proposed maintenance would be consistent with the environmental goals and policies of the General and Community Plans.

Mitigation Measures, Monitoring and Reporting

No mitigation measures would be required.

Issue 2: Would the Project conflict with any adopted regional plans or with environmental plans, including applicable habitat conservation plans?

City of San Diego Environmentally Sensitive Lands Regulations

The City's maintenance of storm water facilities under the Master Program would result in encroachment into the resources protected by the regulations including biological resources and special flood hazard areas resulting from maintenance activities. No impacts to steep slopes would occur with proposed maintenance because the slopes are not natural and/or would not exceed a height greater than 50 feet. The exemption granted to public maintenance access would preclude any conflicts with ESL Regulations in relationship to steep slopes or biological resources.

Encroachment into biological resources would result from removal of sensitive vegetation related to maintenance activities within or adjacent to the channels. As discussed in Subchapter 4.3, Biological Resources, channel maintenance is anticipated to impact a variety of upland as well as wetland vegetation types that are protected under the ESL Regulations.

Equipment noise would have an indirect impact on sensitive bird species due to interference with breeding behavior. The effects of sound are subjective insofar as the receptor determines the level of nuisance, and there is a wide range of tolerance. Unwanted sound can cause disruption in communication (e.g., avian nestlings calling to their parents) and disruption of sleep or rest patterns (e.g., daytime sounds as they affect primarily nocturnal animals). For the least Bell's vireo, southwestern willow flycatcher, and the coastal California gnatcatcher, a level of 60 dBA L_{eq} is used as the sensitive bird breeding noise impact threshold in the San Diego region. In practice, this threshold has been modified to address the common occurrence where ambient pre-project noise levels in the nesting habitat exceed 60 dBA L_{eq} . As discussed in Subchapter 4.6, Noise, the 60 dBA L_{eq} contour could extend from 243 to 739 feet from the maintenance activity; the lowest distance represents hand clearing while the highest distance is associated with mechanized equipment.

Indirect noise impacts to nesting/breeding coastal California gnatcatchers, least Bell's vireo, or raptors could occur if maintenance activities create noise in excess of 60 dB(A) L_{eq} in occupied habitat during the gnatcatcher breeding season (March 1 to August 15), vireo breeding season (March 15 to September 15), or raptor breeding season (February 1 to August 1). Thus, significant impacts to ESL-protected biological resources could occur from maintenance.

Construction activities could also impact raptors protected under the ESL Regulations, which have potential to occur in trees within riparian woodlands and eucalyptus woodlands, or in adjacent grasslands. Construction impacts to these birds may occur when maintenance would take place within 300 feet of an active Cooper's hawk nest, 900 feet of an active northern harrier nest, or 500 feet of any other raptor nest. Such activity may cause temporary or permanent abandonment of a nest, which would expose eggs or nestlings to predation or exposure to the elements.

By definition, maintenance would occur in areas that are identified as special flood areas. Maintenance would impact these areas through removal of accumulated sediment and/or vegetation protected under ESL Regulations.

City of San Diego Historical Resources Regulations

Although a small chance exists that maintenance could impact historical resources, implementation of mitigation measures identified in Subchapter 4.4, Historical Resources, would reduce potential impacts to historical resources to below a level of significance.

City of San Diego Multiple Species Conservation Program Subarea Plan

As illustrated in Table 4.1-3, MSCP Consistency Evaluation, maintenance activities would be consistent with relevant policies and guidelines of the City's MSCP.

**Table 4.1-3
 MSCP CONSISTENCY EVALUATION**

MSCP Policy/Guideline	Evaluation	Consistent?
General Planning Policies and Guidelines		
<p>Flood control should generally be limited to existing agreements with Resource Agencies unless demonstrated to be needed based on a cost-benefit analysis and pursuant to the restoration plan. Floodplains within the MHPA, and upstream from the MHPA, if feasible, should remain in a natural condition and configuration in order to allow for the ecological, geological, hydrological, and other natural processes to remain or be restored.</p>	<p>While implementation of the Master Program would periodically remove natural vegetation associated with earthen storm water facilities to assure proper flood control function, the natural configuration of the storm water facilities would not be modified other than to remove accumulated sediment and vegetation would be expected to reestablish between maintenance intervals.</p>	<p>Yes</p>
<p>No berming, channelization, or man-made constraints or barriers to creek, tributary, or river flows should be allowed in any floodplain within the MHPA unless reviewed by all appropriate agencies, and adequately mitigated. Review must include impacts to upstream and downstream habitats, flood flow volumes, velocities and configurations, water availability, and changes to the water table level.</p>	<p>The Master Program is focused on maintaining existing storm water facilities. In some cases, check dams or other devices may be installed to maintain water quality. However, the location and design of these facilities would be reviewed by the appropriate agencies and City MSCP staff, as part of the annual storm water maintenance plan approval process.</p>	<p>Yes</p>
<p>No riprap, concrete, or other unnatural material shall be used to stabilize river, creek, tributary, and channel banks within the MHPA. River, stream, and channel banks shall be natural, and stabilized where necessary with willows and other appropriate native plantings. Rock gabions may be used where necessary to dissipate flows and should incorporate design features to ensure wildlife movement.</p>	<p>The Master Program is focused on maintaining existing storm water facilities which would include replacing existing riprap, concrete or unnatural material. While installation of new riprap, concrete or other materials may be necessary, it would not be expected to be a common occurrence. Furthermore, mitigation for the additional impacts would be required.</p>	<p>Yes</p>
<p>Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitats unless determined to be unavoidable. All such activities must occur on existing agricultural lands or other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for the disturbed areas after project completion will be required.</p>	<p>Access, staging and stock pile areas have been reviewed and approved as part of the Master Program. No additional access, staging or stock piles would be created without prior approval from the appropriate agencies and City MSCP staff.</p>	<p>Yes</p>

Table 4.1-3 (cont.) MSCP CONSISTENCY EVALUATION		
MSCP Policy/Guideline	Evaluation	Consistent?
General Planning Policies and Guidelines (cont.)		
Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage. Environmental documents and Mitigation Monitoring and Reporting Programs covering such development must clearly specify how this will be achieved, and construction plans must contain all the pertinent information and be readily available to crews in the field. Training of construction crews and field workers must be conducted to ensure that all conditions are met. A responsible party must be specified.	Maintenance activities would be of limited durations and would occur during daylight hours when wildlife movement is limited.	Yes
Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/emergency access roads.	Access would be limited to those routes included in the Master Program and analyzed in the certified PEIR without approval of appropriate agencies and City MSCP staff.	Yes
Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible of the MHPA in order to minimize impacts and fragmentation of sensitive species and habitat. If roads cross the MHPA, they should provide for fully functional wildlife movement capability. Bridges are the preferred method of providing for movement, although culverts in selected locations may be acceptable. Fencing, grading, and plant cover should be provided where needed to protect and shield animals, and guide them away from roads to appropriate crossings.	Access would be limited to those routes included in the Master Program and analyzed in the certified PEIR without approval of appropriate agencies and City MSCP staff.	Yes
Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.	Access would be limited to those routes included in the Master Program and analyzed in the certified PEIR without approval of appropriate agencies and City MSCP staff.	Yes
For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained. Exceptions may occur where underutilized or duplicative road systems are determined not to be necessary.	Access would be limited to those routes included in the Master Program and analyzed in the certified PEIR without approval of appropriate agencies and City MSCP staff.	Yes

Table 4.1-3 (cont.) MSCP CONSISTENCY EVALUATION		
MSCP Policy/Guideline	Evaluation	Consistent?
MHPA Adjacency Guidelines		
Lighting of all developed adjacent areas should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berms, and/or other methods to protect MHPA and sensitive species from night lighting.	Maintenance activities would be of limited durations and would occur during daylight hours.	Yes
Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species.	Wherever possible, maintenance activities would avoid breeding seasons for sensitive bird species. Where avoidance during the breeding season is not possible, noise reductions measures would be incorporated into the maintenance activities.	Yes
No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.	The Master Program contains maintenance protocols which prohibit the use of invasive plants in revegetation efforts as well as measures to limit the spread of existing invasive species into downstream areas during maintenance.	Yes
General Management Directives		
Mitigation, when required as part of project approvals, shall be performed in accordance with the City of San Diego ESL Regulations and Biology Guidelines.	Mitigation measures would be carried out in compliance with the ESL Regulations and Biology Guidelines.	Yes
Restoration or revegetation undertaken within the MHPA shall be performed in a manner acceptable to the City. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.	Restoration or revegetation would be subject to approval by the City as well as state and federal agencies.	Yes
Remove giant reed, tamarisk, pampas grass, castor bean, artichoke thistle, and other exotic invasive species from creek and river systems, canyons and slopes, and elsewhere within the MHPA as funding or other assistance becomes available. Avoid removal activities during the reproductive seasons of sensitive species and avoid/minimize impacts to sensitive species or native habitats.	By their nature, maintenance activities would promote this guideline because they would remove these species due to their adverse impact on the flood control function of storm water facilities. In addition, the Master Program includes maintenance protocols to minimize the downstream spread of invasive species during removal.	Yes
Perform standard maintenance, such as clearing and dredging of existing flood channels, during the non-breeding or nesting season of sensitive bird or wildlife species utilizing the riparian habitat. For the least Bell's vireo, the non-breeding season generally includes mid-September through mid-March.	The Master Program contains specific maintenance protocols that would preclude clearing of suitable habitat during the designated breeding seasons for potentially occurring sensitive birds (e.g., coastal California gnatcatcher and least Bell's vireo). In addition, noise attenuation barriers would be required when maintenance noise levels could interfere with breeding activities.	Yes
Review existing flood control channels within the MHPA periodically (every 5 to 10 years) to determine the need for their retention and	The Master Program would provide for the routine inspections and maintenance identified in this guideline.	Yes

Table 4.1-3 (cont.) MSCP CONSISTENCY EVALUATION		
MSCP Policy/Guideline	Evaluation	Consistent?
maintenance, and to assess alternatives, such as restoration of natural rivers and floodplains.		
Special Conditions for Covered Species		
Area-specific management directives for the coastal California gnatcatcher must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to improve habitat quality including vegetation structure. No clearing of occupied habitat within the City’s MHPA may occur between March 1 and August 15.	The MMRP included in the PEIR contains mitigation measures that would preclude clearing of suitable habitat during the designated breeding season for the coastal California gnatcatcher. In addition, noise attenuation barriers would be required when maintenance noise levels could interfere with breeding activities within the MHPA.	Yes
Area-specific management directives for least Bell’s vireo and southwestern willow flycatcher must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 15 and March 15 for the vireo and between September 1 and May 1 for the willow flycatcher (i.e., outside of the nesting season).	The MMRP included in the PEIR contains specific mitigation measures that would preclude clearing of suitable habitat during the designated breeding seasons for the southwestern willow flycatcher and least Bell’s vireo. In addition, noise attenuation barriers would be required when maintenance noise levels could interfere with breeding activities within the MHPA.	Yes
Area-specific management directives for the Cooper’s hawk must include 300-foot impact avoidance areas around active nests, and minimization of disturbance in oak woodlands and oak riparian forests.	The MMRP included in the PEIR includes a mitigation measure which would require maintenance activities to maintain a setback of 300 feet from active nests.	Yes
Area-specific management directives for the Northern Harrier must: manage agricultural and disturbed lands within 4 miles of nesting habitat to provide foraging habitat; include an impact avoidance area (900 feet) around active nests; and include measures for maintaining winter foraging habitat in preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley.	The MMRP included in the PEIR includes a mitigation measure which would require maintenance activities to maintain a setback of 900 feet from active nests.	Yes
Area-specific management directives for San Diego barrel cactus must include measures to protect this species from edge effects, unauthorized collection, and include appropriate fire management/control practices to protect against a too-frequent fire cycle.	The MMRP included in the PEIR includes a mitigation measure which requires relocation or replanting of this species in the event a substantial number of sensitive plants would be lost in the course of maintenance.	Yes
Area specific management directives for Nuttall’s lotus must include specific measures to protect against detrimental edge effects.	The MMRP included in the PEIR includes protocol mitigation measure which requires relocation or replanting of this species in the event a substantial number of sensitive plants would be lost in the course of maintenance.	Yes

Water Quality Regulatory Framework

As discussed in Subchapter 4.8, Water Quality, implementation of the Master Program would in many cases result in an improvement with respect to water quality by removing polluted sediments. When maintenance is determined to have a net adverse impact on water quality, the mitigation measures identified in Subchapter 4.8, Water Quality, would serve to reduce the water quality impacts of maintenance to below a level of significance. Thus, maintenance performed in accordance with the Master Program would not result in a substantial affect on water quality.

Significance of Impacts

Removal of vegetation within these facilities would result in a significant land use impact due to the loss of sensitive vegetation and the associated wildlife protected by the City's ESL Regulations as well as regional conservation plans. Indirect, significant land use impacts could arise from noise impacts to nesting/breeding coastal California gnatcatchers, least Bell's vireo, or raptors if maintenance activities create noise in excess of 60 dB(A) L_{eq} in occupied habitat during the breeding season of each species. The potential also exists that maintenance could impact historical resources, as discussed in Subchapter 4.4, Historical Resources.

Mitigation Measures, Monitoring and Reporting

The requirement that IHAs be conducted prior to conducting maintenance in areas which could possess important historical resources (Mitigation Measure 4.4.1 coupled with maintenance monitoring provisions when historical resources are determined to be present or potentially present (Mitigation Measure 4.4.2) would reduce potential impacts to historical resources to below a level of significance.

Implementation of water quality protection measures (Mitigation Measures 4.8.1 through 4.8.3), would reduce potential water quality impacts to below a level of significance.

Implementation of the following mitigation measures would reduce the potential impacts to sensitive species targeted for protection by the MSCP to below a level of significance.

Mitigation Measure 4.1.1: Prior to commencing maintenance on any storm water facility within, or immediately adjacent to, a MHPA, the ADD Environmental Designee shall verify that all MHPA boundaries and limits of work have been delineated on all maintenance documents.

Mitigation Measure 4.1.2: A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) recovery permit) shall survey those habitat areas inside and outside the MHPA suspected to serve as habitat (based on historical records or site conditions) for the coastal California gnatcatcher, least Bell's vireo and/or other listed species. Surveys for the appropriate species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service. When other sensitive species, including, but not limited to, the arroyo toad, burrowing owl, or Quino checkerspot butterfly are known or suspected to be present all appropriate protocol surveys and mitigation measures identified in Subchapter 4.3, Biological Resources, required shall be implemented.

Mitigation Measure 4.1.3: If a listed species is located within 500 feet of a proposed maintenance activity and maintenance would occur during the associated breeding season, an analysis of the noise generated by maintenance activities shall be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD Environmental Designee. The analysis shall identify the location of the 60 dB(A) L_{eq} noise contour on the maintenance plan. The report shall also identify measures to be undertaken during maintenance to reduce noise levels.

Mitigation Measure 4.1.4: Based on the location of the 60 dB(A) L_{eq} noise contour and the results of the protocol surveys, the Project Biologist shall determine if maintenance has the potential to impact breeding activities of listed species. If one or more of the following species are determined to be significantly impacted by maintenance, then maintenance (inside and outside the MHPA) shall avoid the following breeding seasons unless it is determined that maintenance is needed to protect life or property.

- Coastal California gnatcatcher (between March 1 and August 15 inside the MHPA only; no restrictions outside MHPA);
- Least Bell's vireo (between March 15 and September 15); and
- Southwestern willow flycatcher (between May 1 and September 1).

Mitigation Measure 4.1.5: If maintenance is required during the breeding season for a listed bird to protect life or property, then the following conditions must be met:

- At least two weeks prior to the commencement of maintenance activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from maintenance activities shall not exceed 60 dB(A) hourly average at the edge of occupied habitat. Concurrent with the commencement of maintenance activities and the maintenance of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated maintenance activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season of the subject species, as noted above.
- Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.

- Prior to the commencement of maintenance activities that would disturb sensitive resources during the breeding season, the biologist shall ensure that all fencing, staking and flagging identified as necessary on the ground have been installed properly in the areas restricted from such activities.
- If noise attenuation walls or other devices are required to assure protection to identified wildlife, then the biologist shall make sure such devices have been properly constructed, located and installed.

Mitigation Measure 4.1.6: A pre-maintenance meeting shall be held with the Maintenance Contractor, City representative and the Project Biologist. The Project Biologist shall discuss the sensitive nature of the adjacent habitat with the crew and subcontractor. Prior to the pre-maintenance meeting, the following shall be completed:

- The Storm Water Division (SWD) shall provide a letter of verification to the Mitigation Monitoring Coordination Section stating that a qualified biologist, as defined in the City of San Diego Biological Resources Guidelines, has been retained to implement the projects MSCP monitoring Program. The letter shall include the names and contact information of all persons involved in the Biological Monitoring of the project. At least thirty days prior to the pre-maintenance meeting, the qualified biologist shall submit all required documentation to MMC, verifying that any special reports, maps, plans and time lines, such as but not limited to, revegetation plans, plant relocation requirements and timing, MSCP requirements, avian or other wildlife protocol surveys, impact avoidance areas or other such information has been completed and updated.
- The limits of work shall be clearly delineated. The limits of work, as shown on the approved maintenance plan, shall be defined with orange maintenance fencing and checked by the biological monitor before initiation of maintenance. All native plants or species of special concern, as identified in the biological assessment, shall be staked, flagged and avoided within Brush Management Zone 2, if applicable.

Mitigation Measure 4.1.7: Maintenance plans shall be designed to accomplish the following.

- Invasive non-native plant species shall not be introduced into areas adjacent to the MHPA. Landscape plans shall contain non-invasive native species adjacent to sensitive biological areas, as shown on the approved maintenance plan.
- All lighting adjacent to, or within, the MHPA shall be shielded, unidirectional, low pressure sodium illumination (or similar) and directed away from sensitive areas using appropriate placement and shields. If lighting is required for nighttime maintenance, it shall be directed away from the preserve and the tops of adjacent trees with potentially nesting raptors, using appropriate placement and shielding.
- All maintenance activities (including staging areas and/or storage areas) shall be restricted to the disturbance areas shown on the approved maintenance plan. The project biologist shall monitor maintenance activities, as needed, to ensure that maintenance

activities do not encroach into biologically sensitive areas beyond the limits of work as shown on the approved maintenance plan.

- No trash, oil, parking or other maintenance-related activities shall be allowed outside the established maintenance areas including staging areas and/or storage areas, as shown on the approved maintenance plan. All maintenance related debris shall be removed off-site to an approved disposal facility.

Mitigation Measure 4.1.8: Prior to commencing any maintenance in, or within 500 feet of any area determined to support coastal California gnatcatchers, the ADD Environmental Designee shall verify that the MHPA boundaries and the following project requirements regarding the coastal California gnatcatcher are shown on the maintenance plans:

NO MAINTENANCE ACTIVITIES SHALL OCCUR BETWEEN MARCH 1 AND AUGUST 15, THE BREEDING SEASON OF THE COASTAL CALIFORNIA GNATCATCHER, UNTIL THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE ADD ENVIRONMENTAL DESIGNEE:

- a. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE HABITAT AREAS WITHIN THE MHPA THAT WOULD BE SUBJECT TO MAINTENANCE NOISE LEVELS EXCEEDING 60 DECIBELS [dB(A)] HOURLY AVERAGE FOR THE PRESENCE OF THE COASTAL CALIFORNIA GNATCATCHER. SURVEYS FOR THE COASTAL CALIFORNIA GNATCATCHER SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF ANY MAINTENANCE. IF GNATCATCHERS ARE PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:
 1. BETWEEN MARCH 1 AND AUGUST 15, MAINTENANCE OF OCCUPIED GNATCATCHER HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND
 2. BETWEEN MARCH 1 AND AUGUST 15, NO MAINTENANCE ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE MAINTENANCE ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED GNATCATCHER HABITAT. AN ANALYSIS SHOWING THAT NOISE GENERATED BY MAINTENANCE ACTIVITIES WOULD NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED

ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES. PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR

3. AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN, NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM MAINTENANCE ACTIVITIES WILL NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE COASTAL CALIFORNIA GNATCATCHER. CONCURRENT WITH THE COMMENCEMENT OF MAINTENANCE ACTIVITIES AND THE CONSTRUCTION OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dB(A) HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED MAINTENANCE ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (AUGUST 16).

* Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD Environmental Designee, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.

- b. IF COASTAL CALIFORNIA GNATCATCHERS ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MARCH 1 AND AUGUST 15 AS FOLLOWS:

1. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR COASTAL CALIFORNIA GNATCATCHER TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.
2. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.

Issue 3: Would the Project be in conflict with any policy or regulation of an agency with jurisdiction over the Project?

Agencies that have jurisdiction over the Master Program would include the Corps, USFWS, RWQCB, CCC, and CDFG with regard to jurisdictional wetlands. Projects are required to abide by the “no net loss” policy with regard to wetlands per both state and federal law. The Corps and RWQCB must authorize wetland disturbance through permits issued pursuant to the CWA (Sections 404 and 401). USFWS and CDFG would issue permits for take of listed species. In addition, CDFG must issue Section 1605 Streambed Alteration Agreement for maintenance proposals that would impact streambeds. A NPDES Permit issued by RWQCB would be required. Individual CDPs issued by the CCC would be required for maintenance within the CCC jurisdiction and the Deferred Certification Areas of the Coastal Zone.

The Master Program would not conflict with any policy or regulation mandated by the Corps, USFWS, CDFG, RWQCB or CCC, as compliance would be required to issue necessary permits.

Significance of Impacts

As stated above, the Master Program would not conflict with any policy or regulation mandated by the Corps, USFWS, CDFG, RWQCB or CCC, as compliance would be required to issue necessary permits.

Mitigation Measures, Monitoring and Reporting

No significant impacts are identified; therefore, no mitigation measures are required.

Issue 4: Would the Project be in conflict with adjacent land uses?

Maintenance activities have the potential to adversely affect adjacent development. Land use activities that would be sensitive to disruption from maintenance include residential, recreation, hospitals, and schools. Equipment noise and dust would be the primary sources of impact. As discussed in Subchapter 4.6, Noise, hourly average noise levels could reach 75 dB(A) within approximately 50 feet from the edge of the channel. The disruption would primarily be associated with activities within the storm water facilities. However, disruption would also occur from use of access roads as well as staging areas outside the storm water facilities. In limited cases, disruption may occur from the creation of access roads where none exist.

With respect to noise-sensitive land uses, several factors serve to reduce the noise impact. First, maintenance activities would be required to comply with the City of San Diego Noise Abatement and Control Ordinance. As a result, maintenance activities would be limited to the hours of 7 a.m. to 7 p.m., Monday through Saturday, excluding holidays and would not exceed an hourly average of 75 dB(A) over an 8-hour period (refer to Subchapter 4.6, Noise, for more detail). Thus, maintenance noise would not disrupt the early morning and evening activities (e.g. sleep), which tend to be the most sensitive to noise.

Standard dust control measures required by the City's grading ordinance would be implemented to control dust.

In addition to the regulatory controls on maintenance, the limited duration and frequency of maintenance within specific channels also would serve to minimize the impact on adjacent areas. As discussed in Chapter 3.0, Project Description, most maintenance would be completed within a matter of days and would occur, on average, no more frequently than once every three years. Natural areas would also be affected by noise and dust, especially if they are occupied by sensitive bird species which have been proven to be adversely affected by high noise levels during their breeding season. While recreation activities (e.g. hiking) may be disrupted by equipment noise, the short-duration and frequency of these activities within specific storm water facilities would minimize the impact. Should sensitive birds be determined to be adversely affected by maintenance noise, implementation of controls on the season and level of noise during the breeding season would be required (refer to Subchapter 4.3, Biological Resources).

Significance of Impacts

As stated above, land use conflict potential would be reduced to less than significant levels through regulatory controls and compliance with City of San Diego ordinances.

Mitigation Measures, Monitoring and Reporting

No significant impacts are identified; therefore, no mitigation measures are required.

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4.2 AESTHETICS/NEIGHBORHOOD CHARACTER

4.2.1 Existing Conditions

Visual Setting and Site Characteristics

The storm water facilities included in the Master Program occur in various visual settings. The majority of areas surrounding the affected storm water facilities are comprised of residential and commercial development. Within urban settings, the storm water facilities which are more natural in appearance are considered aesthetic features which enhance the neighborhood character by providing visual relief from development.

Other visual resources located within the vicinity of the storm water facilities subject to the Master Program include water bodies (e.g., the Pacific Ocean, Mission Bay, and San Diego Bay), hillsides, canyons, coastal bluffs and beaches, and other open space areas such as parks and preserves. Many of the storm water facilities segments are located within or near visual resources identified and/or designated in the City's General Plan and community plans. A number of these scenic resources are visible from public roads or paths adjacent to or within the resources. In addition, many of these resources are visible from adjacent residential and other private land uses.

The existing storm water facilities, as detailed in Table 3-1, range in type from natural, soft-bottomed storm water facilities with mature vegetation to concrete-lined, unvegetated storm water facilities. Since the majority of these facilities are trapezoidal in shape, side-slopes on several soft-bottom (earthen) facilities have been reinforced by concrete and/or rip-rap rock revetment. In general, the soft-bottomed, vegetated channels are most often seen as natural storm water courses that are aesthetically pleasing while the concrete-lined channels and basins may detract aesthetic value from the neighborhood. It is noted that there are cases where natural, soft-bottomed storm water facilities are considered a negative aesthetic feature, such as when the storm water facilities are immensely overgrown, filled with trash and debris, and when they act as camps for homeless people. As conveyance structures, storm water facilities, both concrete-lined and soft-bottomed, often become overgrown with native and invasive vegetation as well as trash and debris when they are not maintained.

Neighborhood Character

The neighborhood characteristics for storm water facilities vary, as they are scattered throughout different neighborhoods within the City. Many are within residential neighborhoods, commercial areas, natural canyons/river valleys, and industrial areas.

Views

In general, the public views of the storm water facilities are from roadways. The facilities are often hidden from view by dense vegetation in the area adjacent to the proposed maintenance or by topography since many of the facilities are located at valley bottoms. Many of the facilities

are only visible from private residences or commercial areas, which are not generally considered sensitive views.

4.2.2 Impacts

Significance Criteria

The City of San Diego's Significance Determination Thresholds (2011) state that a project may significantly impact aesthetics and/or neighborhood character if it would:

- Result in the physical loss, isolation or degradation of a community identification symbol or landmark (e.g., stand of trees, coastal bluff, and/or historic landmark), which is identified in the General Plan, applicable community plan or local coastal program; or
- Strongly contrast with the surrounding development or natural topography through excessive height, bulk, signage, or architectural projections.

Analysis of Impacts

Issue 1: Would the Project substantially alter the existing character of the study area?

Issue 2: Would the Project result in the loss of any distinctive or landmark tree(s), or a stand of mature trees?

Aesthetic/neighborhood character impacts related to the proposed maintenance activities would be associated with the loss of large stands of trees and the aesthetic value to the surrounding area associated with those large stands of trees. As the maintenance activities would be associated with maintenance of existing channels and would not result in new channels or buildings, these activities would not constitute a strong contrast with surrounding development or natural topography.

As described in Chapter 3.0, Project Description, the proposed Master Program includes a range of maintenance activities. Depending on the conditions of the storm water facility, vegetation and debris removal and/or dredging would be completed by either mechanical or non-mechanical means. The selection of maintenance method and equipment would primarily be determined by the characteristics of each storm water facility, including size (width and depth), flow-characteristics, surrounding land uses and vegetation, availability of access, and whether the facility is concrete-lined or natural-bottom. In some cases, the maintenance activity may require water diversion or dewatering. The frequency of maintenance would vary with facility and seasonal conditions, but it is anticipated that most facilities would be maintained every three years. IMPs would be developed for each storm water facility and basin to ensure proper maintenance and determine appropriate maintenance.

The removal of well-developed riparian vegetation associated with natural drainages in order to improve the ability of these drainages to convey flood water would diminish the aesthetic value of the natural drainages. However, the impact of maintenance on the aesthetic/neighborhood character value associated with natural drainages possessing mature trees would not be

significant. In general, mature trees spaced at least 50 feet apart would be allowed to remain in place during maintenance. Given the fact that typical riparian tree canopy widths have a radius of 10-20 feet, this would allow the appearance of a continuous tree canopy to exist following maintenance which would retain the aesthetic value of these drainages. In addition, as stated in Subchapter 4.3, Biological Resources, the dominant understory vegetation (e.g. cat-tails) would be expected to re-establish within one year of maintenance. Thus, the aesthetic/neighborhood character impact of removing this understory vegetation would be temporary in nature.

Lastly, as indicated in Chapter 3.0, Project Description, maintenance activities would not alter the existing configuration of existing natural drainage courses included in the Master Program. Disturbance of areas outside the affected storm water facilities could occur from temporary stockpiling of material removed from the channel and staging areas. Aesthetic impacts related to these activities would be temporary in nature as they would normally not be present for more than 30 days. In addition, the Master Program requires disturbed areas which are not needed to maintain the flood control function of a facility to be revegetated as soon as possible during or after completion of the maintenance.

Significance of Impacts

As maintenance activities would retain many of the large trees, and because undergrowth would recover within six to 12 months after maintenance, maintenance activities would not result in a significant aesthetic/neighborhood character impact.

Mitigation Measures, Monitoring and Reporting

In the absence of significant aesthetic/neighborhood character impacts, no mitigation measures are required.

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4.3 BIOLOGICAL RESOURCES

The following discussion is based on a biological resources study completed for the proposed Master Program by HELIX Environmental Planning, Inc. (HELIX) in June 2009 and revised in May 2011. A copy of the study is included as Appendix D.1. Detailed biological resource maps are contained in Appendix D.2 which are included in Volume 4 of this EIR. In general, the study area for this evaluation is comprised of the area between the top of banks of each of the storm water facilities included in the Master Program. This area is identified as the “channel survey area” shown on each of the vegetation maps within Appendix D.2. Information related to mitigation in the form of wetland enhancement, restoration or creation is contained in Appendix D.3. Information regarding benthic macroinvertebrates (BMI) is based on a letter report prepared by Weston Solutions which is located in Appendix D.4.

The baseline biological resource conditions described in this report are based on field visits to each of the storm water facilities that are included in the proposed Master Program. Each of the facilities were surveyed on foot, with the aid of binoculars when necessary. Access was limited in certain portions of the facilities. In these areas vegetation was mapped using aerial interpretation combined with upstream and/or downstream observations. Surveys were focused on identifying plant communities. Sensitive plants and/or animals were recorded when observed. In addition, the suitability of the existing plant communities to support sensitive species was noted. Comprehensive protocol surveys for sensitive species were not conducted due to cost limitations and the likelihood that the occurrence of sensitive species (particularly animals) would vary through time.

Vegetation communities were mapped in accordance with the City’s Guidelines for Conducting Biological Surveys (2002b). Detailed vegetation mapping for each of the storm water facilities is included in Appendix D.2. Plant and animal species observed/detected within the study area during site visits were recorded and are also presented in Appendix D.1.

4.3.1 Existing Conditions

Vegetation Communities

Eleven wetland/riparian and seven upland vegetation communities occur within the study area, which cover approximately 232.7 acres (Table 4.3-1). Wetland/riparian vegetation communities within the study area include southern riparian forest, southern sycamore riparian woodland, southern willow scrub, mule fat scrub, riparian scrub, freshwater marsh, cismontane alkali marsh, southern coastal saltmarsh, coastal brackish marsh, disturbed wetland, and streambed/open water/natural flood channel. Approximately 36.8 acres of wetland/riparian habitat were mapped within the study area (Table 4.3-1).

Upland vegetation communities include Diegan coastal sage scrub, southern mixed chaparral, non-native grassland, eucalyptus woodland, non-native vegetation/ornamental, disturbed habitat/ruderal, and developed land. Approximately 195.9 acres of upland habitat, including developed land, was mapped within the study area (Table 4.3-1).

Wetland/Riparian Vegetation Communities

Southern Riparian Forest (including disturbed)

Southern riparian forests are composed of winter deciduous trees that require an abundant supply of water at or near the soil surface for most of the year. Species such as willows (*Salix* spp.) and western cottonwood (*Populus fremontii*) form a dense, medium-height canopy. Typical species present in this habitat in the study area include red willow (*Salix laevigata*), western sycamore (*Platanus racemosa*), black willow (*S. gooddingii*), arroyo willow (*S. lasiolepis*), stinging nettle (*Urtica dioica*), pampas grass (*Cortaderia selloana*), and giant reed (*Arundo donax*).

Southern Sycamore Riparian Woodland (including disturbed)

Southern sycamore riparian woodland is a tall, open, broad-leaved, winter-deciduous streamside woodland dominated by western sycamore (*Platanus racemosa*). These stands of woodlands seldom form closed canopy forests, and even may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. Species present on site include western sycamore, poison oak (*Toxicodendron diversilobum*), western cottonwood, castor bean (*Ricinus communis*), and ripgut grass (*Bromus diandrus*).

Southern Willow Scrub (including disturbed)

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat (*Baccharis salicifolia*), and with scattered emergent cottonwood and western sycamores. Typical species occurring in this habitat within the study area include arroyo willow, red willow, black willow, sandbar willow (*Salix exigua*), mule fat, western sycamore, tamarisk (*Tamarix* sp.), Brazilian pepper (*Schinus terebinthifolius*), Mexican fan palm (*Washingtonia robusta*), pampas grass, giant reed, and cattails (*Typha* spp.).

Mule Fat Scrub (including disturbed)

Mule fat scrub is a depauperate, shrubby, riparian scrub community dominated by mule fat and interspersed with shrubby willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table

Riparian Scrub (including disturbed)

Riparian scrub is a generic term for several shrub-dominated communities that occur along storm water facilities and/or riparian corridors. Typical species in this habitat within the study area include mule fat, Hooker's evening primrose (*Oenothera elata* ssp. *hookeri*), and San Diego golden-bush (*Isocoma menziesii* var. *menziesii*).

**Table 4.3-1
 EXISTING VEGETATION COMMUNITIES¹**

HU	Wetlands ²											Total
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	STM/ OW	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.02	0.02	0.21
Peñasquitos	0.00	0.00	5.05	0.80	0.00	7.23	0.00	1.66	0.53	0.19	5.43	20.89
San Diego	36.3	0.77	3.30	0.16	0.00	11.91	0.02	0.00	0.00	0.54	24.01	77.01
Pueblo San Diego	0.00	0.00	2.87	0.50	0.50	5.41	0.00	0.53	0.00	5.38	6.69	21.88
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03
Otay	0.00	0.00	0.30	0.00	0.00	1.94	0.00	0.00	0.00	0.07	0.00	2.31
Tijuana	0.00	0.00	4.66	1.93	0.00	1.63	0.00	0.00	0.00	2.93	3.30	14.45
TOTAL	36.30	0.77	16.18	3.39	0.50	28.29	0.02	2.19	0.53	9.16	39.45	136.78
HU	Uplands ²								Total			
	Tier II	Tier III A	Tier IIIB	Tier IV								
	DCSS	SMC	NNG	EW	NNV/ ORN	DH/ RUD	DEV					
San Dieguito	0.0	0.0	0.0	0.0	0.3	0.0	5.0	5.3				
Peñasquitos	1.1	0.5	1.9	1.7	4.7	4.8	28.0	42.7				
San Diego	1.2	0.1	2.6	0.9	3.8	6.0	22.4	37.0				
Pueblo San Diego	4.7	0.0	10.2	0.2	3.5	10.5	48.2	77.3				
Sweetwater	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3				
Otay	0.0	0.0	2.2	0.0	0.5	6.6	2.4	11.7				
Tijuana	0.0	0.0	2.8	0.0	1.5	8.1	8.2	20.6				
TOTAL	7.0	0.6	19.7	2.8	14.3	36.0	115.5	195.9				

Source: HELIX (2011)

¹ Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, totals reflect rounding

² Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CLOW=coast live oak woodland, CSM=coastal saltmarsh, DCSS=Diegan coastal sage scrub, DEV=developed land, DH/RUD=disturbed habitat/ruderal, DW=disturbed wetland, EW=eucalyptus woodland, FWM=freshwater marsh, MFS=mule fat scrub, NNG=non-native grassland, NNV/ORN=non-native vegetation/ornamental, RS=riparian scrub, SMC=southern mixed chaparral, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, STM/OW=streambed/open water, SWS=southern willow scrub

³ On-site totals comprise 0.01 acre.

Freshwater Marsh (including disturbed)

Freshwater marsh is dominated by perennial emergent monocots that can reach a height between 12 and 15 feet. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs. Species present in this habitat in the study area include cattails, California bulrush (*Scirpus californicus*), umbrella sedge (*Cyperus involucratus*), tall flatsedge (*C. eragrostis*), watercress (*Rorippa nasturtium-aquaticum*), spike-rush (*Eleocharis* spp.), and rabbitsfoot grass (*Polypogon monspeliensis*).

Cismontane Alkali Marsh (including disturbed)

Cismontane alkali marsh is dominated by perennial, emergent, herbaceous monocots. Standing water or saturated soils are present during most or all of the year, and high evaporation and low input of fresh water render these marshes somewhat salty. Characteristic species include yerba mansa (*Anemopsis californica*), sedges (*Carex* spp.), saltgrass (*Distichlis spicata*), beardless wild rye grass (*Leymus triticoides*), and rushes (*Juncus* spp.), among others. Yerba mansa, saltgrass, Mexican rush (*Juncus mexicanus*), bristly ox-tongue (*Picris echioides*), Hooker's evening primrose, and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) were the dominant species in this habitat on site.

Southern Coastal Saltmarsh

Coastal saltmarsh is dominated by plants adapted to the higher soil salinity levels and frequent inundation. These areas are periodically flooded by salt water. Typical plant species include California seablite (*Suaeda californica*), common glasswort and pickleweed (*Salicornia* spp.), and saltgrass. Species present on site included glasswort, alkali-heath (*Frankenia salina*), fleshy jaumea (*Jaumea carnosa*), western marsh-rosemary (*Limonium californicum*), California loosestrife (*Lythrum californicum*) and saltgrass.

Coastal Brackish Marsh

Coastal brackish marsh is dominated by perennial, emergent, herbaceous monocots that are adapted to varying soil salinities due to input from saltwater and freshwater. It is very similar to cismontane alkali marsh, with many of the same species. This habitat typically intergrades with coastal salt marshes toward the ocean and occasionally with freshwater marshes at the mouths of rivers. Species observed in this habitat on site include cattails, southwestern spiny rush, saltgrass, and glasswort.

Disturbed Wetland

This community is typically dominated by exotic wetland species that have likely become established following previous disturbance(s), although it may also contain native species. The composition of disturbed wetland is highly variable based on the hydrology, soils, and type and frequency of disturbance. Species present in this habitat within the study area include rabbitfoot grass, curly dock (*Rumex crispus*), giant reed, bristly ox-tongue, cockle-bur (*Xanthium*

strumarium), umbrella sedge, common celery (*Apium graveolens*), Bermuda grass (*Cynodon dactylon*), and poison hemlock (*Conium maculatum*).

Streambed/Open Water

Streambed/open water habitat includes unvegetated drainages with a natural bottom. Areas mapped as open water either support perennial surface flows, or were inundated at the time of mapping.

Upland Vegetation Communities

Diegan Coastal Sage Scrub (including disturbed; Tier II)

Diegan coastal sage scrub is dominated by low, soft-woody subshrubs on xeric sites characterized by shallow soils. Typical species found on site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum* ssp. *fasciculatum*), laurel sumac (*Malosma laurina*), black sage (*Salvia mellifera*), California encelia (*Encelia californica*), lemonadeberry (*Rhus integrifolia*), and coast prickly-pear (*Opuntia littoralis*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is more sparse and has a higher proportion of non-native annual species.

Southern Mixed Chaparral (including disturbed) (Tier IIIA)

Southern mixed chaparral is composed of broad-leaved sclerophyllous shrubs that can reach 6 to 10 feet in height and form dense often nearly impenetrable stands with poorly developed understories. Species present on site include chamise, toyon (*Heteromeles arbutifolia*), mountain mahogany, and laurel sumac.

Non-native Grassland (Tier IIIB)

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. Characteristic species include oats (*Avena* spp.), foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass, ryegrass (*Lolium* sp.) and mustard (*Brassica* spp.).

Eucalyptus Woodland (Tier IV)

Eucalyptus woodland is dominated by any of several species of eucalyptus (*Eucalyptus* spp.), all of which are large, non-native trees that produce abundant amounts of leaf and bark litter. The chemical and physical characteristics of this litter limit the ability of other species to grow in the understory, causing floristic diversity to decrease.

Non-native Vegetation/Ornamental (Tier IV)

Non-native vegetation/ornamental consists of cultivated plants that have naturalized into otherwise native habitat areas or were put in place by humans, usually for the purpose of

beautification, windbreaks, or other related purposes. Species observed in this habitat include Peruvian pepper (*Schinus terebinthifolius*), Brazilian pepper, golden wattle (*Acacia longifolia*), myoporum (*Myoporum laetum*), sea-fig (*Carpobrotus chilensis*), hottentot-fig (*Carpobrotus edulis*), oleander (*Nerium oleander*), Canary Island date palm (*Phoenix canariensis*), fountain grass (*Pennisetum setaceum*), and carrotwood (*Cupaniopsis anacardioides*).

Disturbed Habitat/Ruderal (Tier IV)

Disturbed habitat/ruderal areas are devoid of vegetation due to soil disturbance (dirt roads and/or grading) or are dominated by exotic, annual forbs without a major grass component. Pursuant to City guidelines for mapping disturbed habitat, these areas can be bare ground, or when vegetated, are dominated by at least 50 percent cover of invasive broad-leaved non-native plant species. Plants observed in this community on site include garland daisy (*Chrysanthemum coronarium*), Russian thistle (*Salsola tragus*), castor-bean (*Ricinus communis*), star-thistle (*Centaurea melitensis*), shortpod mustard (*Hirschfeldia incana*), fennel (*Foeniculum vulgare*), horehound (*Marrubium vulgare*), cheeseweed (*Malva parviflora*), and filaree (*Erodium* spp.).

Developed/Concrete Channel

Developed land is where permanent structures and/or pavement have been placed. Unvegetated concrete-lined channels constitute the majority of area within the storm water facilities that are designated “Developed/Concrete Channel”.

Plant Species Observed

A total of 127 plant species were observed within the study area. A list of plant species observed during the site visits is provided in Appendix D.1.

Animal Species Observed or Detected

A total of 96 animal species were observed/detected within the study area, including 12 butterflies (among other invertebrates), 1 amphibian, 3 reptiles, 72 birds, and 8 mammals (Appendix D.1). All animal species were identified by direct observation or vocalizations, presence of scat and/or tracks, or other sign. As discussed in Appendix D.4, BMI are anticipated to occur within the storm water facilities. Although no specific estimate of the number different species were made, BMI are anticipated to include the larval and adult stages of aquatic insects as well as all life stages of non-insects (e.g., amphipods, crayfish, and flatworms).

Wetland Jurisdictional Areas

A program-level jurisdictional delineation was conducted within subject storm water channels, and the results categorized by Hydrologic Units (HUs). An estimate of the amount of jurisdictional wetlands within each HU is shown in Tables 4.3-2 and 4.3-3.

Table 4.3-2
EXISTING CORPS JURISDICTIONAL AREAS (acre[s])¹

HU ²	Wetlands ³											Non-wetland WUS		Total
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	Subtotal	Earthen	Concrete	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	.002	1.49	1.52
Peñasquitos	0.00	0.00	2.40	0.09	0.00	6.14	0.00	1.66	0.31	0.05	10.65	5.29	13.39	29.33
San Diego	12.75	0.00	3.16	0.05	0.00	10.00	0.00	0.00	0.00	0.03	25.99	24.99	5.85	56.83
Pueblo San Diego	0.00	0.00	1.23	0.19	0.36	5.35	0.00	0.53	0.00	10.87	10.87	7.92	14.91	33.70
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28
Otay	0.00	0.00	0.16	0.00	0.00	1.71	0.00	0.00	0.00	0.04	1.91	0.00	0.57	2.48
Tijuana	0.00	0.00	2.56	0.67	0.00	1.44	0.00	0.00	0.00	2.29	6.96	5.66	1.64	14.26
TOTAL	12.75	0.00	9.51	1.00	0.36	24.65	0.00	2.19	0.31	5.62	56.39	43.88	38.13	138.40

Source: HELIX (2011)

¹Totals reflect rounding

²The HUs correspond to the following Storm Water Facility Maps in Appendix D.1: San Dieguito HU=Maps 1-3 and 169; Peñasquitos HU=Maps 4-46, 55-57, 163-168, and 170-172; San Diego HU=Maps 47-54, 58-66, 81-83, and 140-161; Pueblo San Diego HU= Maps 67-80 and 84-121; Sweetwater HU= Map 122; Otay HU= Maps 131-135; Tijuana HU= Maps 123-130 and 136-139

³Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CSM=coastal saltmarsh, DW=disturbed wetland, FWM=freshwater marsh, MFS=mule fat scrub, RS=riparian scrub, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, SWS=southern willow scrub, WUS=Waters of the U.S.

**Table 4.3-3
 EXISTING CDFG AND CITY JURISDICTIONAL AREAS (acre[s])¹**

Hydrologic Unit (HU) ²	Wetland/Riparian Habitat ³											Drainage	Total CDFG/ City
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	Wetland/ Riparian Total	STM/ NFC	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.02	0.19	0.02	0.21
Peñasquitos	0.00	0.00	5.05	0.80	0.00	7.23	0.00	1.66	0.53	0.19	15.46	5.43	20.89
San Diego	36.30	0.77	3.30	0.16	0.00	11.91	0.02	0.00	0.00	0.54	53.00	24.01	77.01
Pueblo San Diego	0.00	0.00	2.87	0.50	0.50	5.41	0.00	0.53	0.00	5.38	15.19	6.69	21.88
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.03
Otay	0.00	0.00	0.30	0.00	0.00	1.94	0.00	0.00	0.00	0.07	2.31	0.00	2.31
Tijuana	0.00	0.00	4.66	1.93	0.00	1.63	0.00	0.00	0.00	2.93	11.15	3.30	14.45
TOTAL	36.30	0.77	16.18	3.39	0.50	28.29	0.02	2.19	0.53	9.16	97.33	39.45	136.78

Source: HELIX (2011)

¹Totals reflect rounding

²The HUs correspond to the following Storm Water Facility Maps in Appendix D.1: San Dieguito HU=Maps 1-3 and 169; Peñasquitos HU=Maps 4-46, 55-57, 163-168, and 170-172; San Diego HU=Maps 47-54, 58-66, 81-83, and 140-161; Pueblo San Diego HU=Maps 67-80 and 84-121; Sweetwater HU=Map 122; Otay HU=Maps 131-135; Tijuana HU=Maps 123-130 and 136-139

³Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CSM=coastal saltmarsh, DW=disturbed wetland, FWM=freshwater marsh, MFS=mule fat scrub, RS=riparian scrub, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, STM/OW=streambed/open water, and SWS=southern willow scrub

⁴CDFG Acreage

⁵City Acreage

Federal (Corps) Jurisdictional Areas

The total area under Corps jurisdiction is approximately 138.40 acres. Of this total, 56.39 acres are considered wetlands. The balance, 82.01 acres, are considered non-wetland Waters of the United States (WUS). The non-wetland category includes 43.88 acres of unvegetated earthen channels and 38.13 acres of concrete channels. The 38.13 acres of concrete channels represents an exaggeration of the Corps jurisdiction because the Corps jurisdiction is limited to the ordinary high water mark which covers less area than the full concrete channel width. As illustrated in Table 4.3-2, the majority of wetland habitat occurs along named storm water channels within the San Diego, Pueblo, and Peñasquitos HUs.

State (California Department of Fish and Game Jurisdictional Areas

CDFG jurisdictional areas constitute approximately 136.78 acres within the study area. As illustrated in Table 4.3-3, the approximate acreages of each of the different types of wetlands that are included in the CDFG's jurisdiction area: 36.30 acres of southern riparian forest, 0.77 acre of southern sycamore riparian woodland, 16.18 acres of southern willow scrub, 3.39 acres of mule fat scrub, 0.50 acre of riparian scrub, 28.29 acres of freshwater marsh, 0.02 acre of cismontane alkali marsh, 2.19 acres of coastal saltmarsh, 0.53 acre of coastal brackish marsh, 9.16 acres of disturbed wetland, and 39.45 acres of unvegetated streambed.

City Wetlands

City wetlands include all the same areas as noted above for CDFG jurisdiction. Therefore, City jurisdictional areas constitute approximately 136.78 acres within the study area, of which 39.45 acres are unvegetated natural flood channels (Table 4.3-3).

Sensitive Resources

Sensitive Vegetation Communities

Sensitive vegetation communities are considered rare within the region or sensitive by CDFG (Holland 1986) or the City (City 1997a and 2001). These communities in any form are considered sensitive because they have been historically depleted, are naturally uncommon, or support sensitive species. The study area supports the following 14 sensitive vegetation communities: southern riparian forest, southern sycamore riparian woodland, southern willow scrub, mule fat scrub, riparian scrub, freshwater marsh, cismontane alkali marsh, southern coastal saltmarsh, coastal brackish marsh, disturbed wetland, natural flood channel, Diegan coastal sage scrub, southern mixed chaparral, and non-native grassland.

Sensitive Plants

No federally- or state-listed species or City narrow endemic plants species were observed within the study area; however, the following four sensitive plant species were observed: single-whorl burrobush (*Ambrosia monogyra*), San Diego marsh-elder (*Iva hayesiana*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and San Diego sunflower (*Viguiera laciniata*). These species are described in more detail below.

The single-whorl burrobush (*Ambrosia monogyra*) is a California Native Plant Society (CNPS) List 2.2 plant. It was observed in ruderal habitat on the banks of a minor channel paralleling Delevan Drive, west of Chollas Creek. The California Natural Diversity Database (CNDDDB) also reports this species in the general vicinity of Smuggler’s Gulch.

The San Diego marsh-elder (*Iva hayesiana*) is a CNPS List 2.2 plant. It was observed in riparian scrub and Diegan coastal sage scrub adjacent to South Chollas Creek. This species is fairly widespread in San Diego County and would be expected to occur in other locations within the study area.

The southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) is a CNPS List 4.3 plant. It was observed in cismontane alkali marsh adjacent to the El Camino Real basin, in a seep adjacent to the Alvarado Channel, and in marsh habitat within South Chollas Creek and the San Diego River.

The San Diego sunflower (*Viguiera laciniata*) is a CNPS List 4.3 plant. It was observed within scrub habitats adjacent to the Black Mountain Road basin, the Camino Santa Fe basin, as well as in Diegan coastal sage scrub abutting Chollas Creek, South Chollas Creek and Encanto Channel.

City narrow endemic plant species not observed during the programmatic-level surveys but with potential to occur within the study area are listed in Table 4.3-4. Additional sensitive plant species that were not observed but have potential to occur in the study area are described in Table 4.3-5.

**Table 4.3-4
 NARROW ENDEMIC SPECIES WITH POTENTIAL TO OCCUR**

SPECIES	STATUS¹	POTENTIAL TO OCCUR
San Diego thorn-mint (<i>Acanthomintha ilicifolia</i>)	FT ² /SE CNPS List 1B.1 MSCP Covered	Low to moderate. Occurs on clay lenses and friable, cracked, clay soils in open areas within grasslands. Project focused around storm water channels, which typically do not support appropriate habitat. Species has been reported in the general vicinity of Map Nos. 52, 61, 62, 64, and d147 (CDFG 2003).
Shaw’s agave (<i>Agave shawii</i>)	--/-- CNPS List 2.1 MSCP Covered	Low. Generally occurs in coastal sage scrub and maritime succulent scrub, often on volcanic soils.
San Diego ambrosia (<i>Ambrosia pumila</i>)	FE ² /-- CNPS List 1B.1 MSCP Covered	Moderate. Primarily restricted to flat or sloping grasslands, often along valley bottoms or areas adjacent to vernal pools as well as creek beds, seasonally dry drainages, and flood-plains.
Aphanisma (<i>Aphanisma blitoides</i>)	--/-- CNPS List 1B.2 MSCP Covered	Very low. Occurs on coastal bluffs and beach dunes, little of which occur within the study area.

**Table 4.3-4 (cont.)
 NARROW ENDEMIC SPECIES WITH POTENTIAL TO OCCUR**

SPECIES	STATUS ¹	POTENTIAL TO OCCUR
Coastal dunes milk vetch (<i>Astragalus tener</i> var. <i>titi</i>)	FE/SE CNPS List 1B.1 CA Endemic MSCP Covered	Low. Occurs in coastal dune communities. Suitable habitat within the study area only occurs near the mouth of the San Diego River.
Encinitas baccharis (<i>Baccharis vanessae</i>)	FT/SE CNPS List 1B.1 CA Endemic MSCP Covered	Low. Found in southern maritime chaparral and mature but relatively low-growing southern mixed chaparral. Project focused around storm water channels, which do not support appropriate habitat.
Otay tarplant (<i>Deinandra conjugens</i>)	FT ² /SE CNPS List 1B.1	Low to moderate. Found on fractured clay soils in grasslands or lightly vegetated coastal sage scrub. Portions of study area within Otay Mesa may support species, which has been reported in the general vicinity of Map Nos. 124-127 (CDFG 2003).
Short-leaved dudleya (<i>Dudleya brevifolia</i>)	--/SE CNPS List 1B.1 CA Endemic MSCP Covered	Low. Occurs in open areas and sandstone bluffs of chamise chaparral or Torrey pine forest, which are not common in the study area.
Variegated dudleya (<i>Dudleya variegata</i>)	--/-- CNPS List 1B.2 MSCP Covered	Low to moderate. Found on cobbly clay soils in very open sage scrub and grassland, and especially among vernal pool communities. Habitat within the study area is largely unsuitable. Species reported in the general vicinity of Map Nos. 61-62, and 126-127 (CDFG 2003).
San Diego button-celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>)	FE ² /SE CNPS List 1B.1	Low to moderate. Found in vernal pool communities and vernal moist areas with mima mound topography. Suitable habitat does not occur within the study area. Species reported in the general vicinity of Map Nos. 6-7, 47, 66, 101, 125-128, and 145-146 (CDFG 2003).
Prostrate navarretia (<i>Navarretia prostrata</i>)	FT/-- CNPS List 1B.1 CA Endemic MSCP Covered	Very low. Occurs in vernal pool communities, which were not observed within the study area. No CNDDDB records within the Master Program study area.
Snake cholla (<i>Opuntia californica</i> var. <i>californica</i>)	--/-- CNPS List 1B.1 MSCP Covered	Moderate. Occurs in Diegan coastal sage scrub on xeric hillsides from Point Loma south to Chula Vista. Species reported in the general vicinity of Map Nos. 11-13, 70, 76-78, and 85 (CDFG 2003).

Table 4.3-4 (cont.) NARROW ENDEMIC SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
California Orcutt grass (<i>Orcuttia californica</i>)	FE ² /SE CNPS List 1B.1	Low to moderate. Occurs in vernal pool communities, which were not observed within the study area. Species reported in the general vicinity of Map No. 128 (CDFG 2003).
San Diego mesa mint (<i>Pogogyne abramsii</i>)	FE ² /SE CNPS List 1B.1 CA Endemic	Low. Occurs in vernal pool communities, which were not observed within the study area. Species reported in the general vicinity of Map No. 66 (CDFG 2003).

Source: HELIX (2011)

¹Refer to Appendix D of Appendix D.1 of the PEIR for a listing and explanation of status and sensitivity codes.

²As of the date of surrender, April 20, 2010, the City has relinquished coverage and does not rely on the City's Federal Incidental Take Permit (ITP) to authorize an incidental take of this vernal pool animal species. Upon completion of a Habitat Conservation Plan (HCP) for vernal pools, the City would enter into an Implementing Agreement in order to obtain species coverage and a Federal ITP for this species.

Table 4.3-5 LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
California adolphia (<i>Adolphia californica</i>)	--/-- CNPS List 2.1	Moderate to high. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly on hillsides above creeks. Reported in the general vicinity of Map Nos. 4, 51, 59-65, and 76-80 (CDFG 2003).
San Diego bur-sage (<i>Ambrosia chenopodifolia</i>)	--/-- CNPS List 2.1	Low to moderate. Arid, low-growing, fairly open Diegan coastal sage scrub is preferred. Olivenhain cobbly loam is the soil type mapped for the San Ysidro population. Species reported in the general vicinity of Map Nos. 129-130 (CDFG 2003).
Del Mar manzanita (<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>)	FE/-- CNPS List 1B.1 MSCP Covered	Low. Generally found in southern maritime chaparral and Torrey pine forest. Although this species has been reported in the vicinity of Map Nos. 7-11 (CDFG 2003), it is not expected to occur within the mapped storm water facilities.
Otay manzanita (<i>Arctostaphylos otayensis</i>)	--/-- CNPS List 1B.2 MSCP Covered	Very low. Known only from Otay, San Miguel, Jamul, and Guatay mountains in San Diego County.
San Diego sagewort (<i>Artemisia palmeri</i>)	--/-- CNPS List 4.2	Moderate to high. Found in moist drainages with sandy soils. SDHNM Plant Atlas has records of this species east of Map 32, as well as in other locations in the City.
Dean's vetch (<i>Astragalus deanei</i>)	--/-- CNPS List 1B.1	Low. Dry hillsides in open coastal sage scrub, chaparral, or southern oak woodland. Rocky sandy loam is the soil type mapped for the Tecate population.

Table 4.3-5 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Coulter's saltbush (<i>Atriplex coulteri</i>)	--/-- CNPS List 1B.2	Low. Found in coastal bluff scrub, coastal dunes, valley and foothill grasslands, and desert slopes.
South coast saltscale (<i>Atriplex pacifica</i>)	--/-- CNPS List 1B.2	Moderate. Occurs in coastal bluff scrub or sandy, open coastal sage scrub.
Davidson's saltscale (<i>Atriplex serenana</i> var. <i>davidsonii</i>)	--/-- CNPS List 1B.2	Low. Primarily occurs in coastal bluff scrub, although Reiser (2001) suggests it was historically associated with alkaline flats.
Golden-spined cereus (<i>Bergerocactus emoryi</i>)	--/-- CNPS List 2.2	Low. Sandy soils and dry bluffs along the coast associated with maritime succulent scrub. Species reported in the general vicinity of Map Nos. 128-135 (CDFG 2003).
Thread-leaved brodiaea (<i>Brodiaea filifolia</i>)	FT/SE CNPS List 1B.1 MSCP Covered	Low. Clay soils in vernal moist grasslands and vernal pool periphery are typical locales.
Orcutt's brodiaea (<i>Brodiaea orcuttii</i>)	--/-- CNPS List 1B.1 MSCP Covered	Low to moderate. Occurs in vernal moist grasslands and on the periphery of vernal pools but will occasionally grow on streamside embankments (Reiser 2001). Species reported in the general vicinity of Map Nos. 51-52 (CDFG 2003).
Dunn's mariposa lily (<i>Calochortus dunnii</i>)	--/SR CNPS List 1B.2 MSCP Covered	Low. Dry, stony ridges and firebreaks in chaparral or grassland/chaparral ecotone. Appears to be restricted to gabbroic and metavolcanic soils.
Lakeside ceanothus (<i>Ceanothus cyaneus</i>)	--/-- CNPS List 1B.2 MSCP Covered	Very low. Generally found in inland chaparral from Crest up to the Lakeside foothills (Reiser 2001). Suitable habitat does not occur within the study area.
Wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>)	--/-- CNPS List 2.2 MSCP Covered	Low. Xeric chamise and mixed chaparrals. Species reported in the general vicinity of Map Nos. 6-11, 42-44, 59-62, 66, 70, and 85-86 (CDFG 2003). However, very little chaparral was mapped in the actual study area.
Southern tarplant (<i>Centromadia parryi</i> ssp. <i>australis</i>)	--/-- CNPS List 1B.1	Low. Found in valley and foothill grasslands, particularly near alkaline locales.
Orcutt's pincushion (<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>)	--/-- CNPS List 1B.1	Low to moderate. Occurs in open Diegan coastal sage scrub, typically in proximity to moist ocean breezes (Reiser 2001).

Table 4.3-5 (cont.)		
LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Orcutt's spineflower (<i>Chorizanthe orcuttiana</i>)	FE/SE CNPS List 1B.1	Low. Found in coastal chamise chaparral openings with loose sandy substrate (Reiser 2001). Very little chaparral was mapped within the study area.
Long-spined spineflower (<i>Chorizanthe polygonoides</i> var. <i>longispina</i>)	--/-- CNPS List 1B.2	Low. Typically found on clay lenses and on the periphery of vernal pools. Species reported in the general vicinity of Map No. 47 (CDFG 2003).
Delicate clarkia (<i>Clarkia delicata</i>)	--/-- CNPS List 1B.2	Low. Shaded areas or the periphery of oak woodlands and cismontane chaparral. Very little appropriate habitat occurs within the study area.
Summer holly (<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>)	--/-- CNPS List 1B.2	Moderate. Mesic north-facing slopes in southern mixed chaparral are preferred habitat of this large, showy shrub. Species has been reported in the general vicinity of Map No. 66 (CDFG 2003).
Salt marsh bird's beak (<i>Cordylanthus maritimus</i> spp. <i>maritimus</i>)	FE/SE CNPS List 1B.2 MSCP Covered	Low. Salt marshes, particularly slightly raised hummocks. Only two native sites definitely extant in San Diego County (Reiser 2001), neither of which is within the study area.
Orcutt's bird's beak (<i>Cordylanthus orcuttianus</i>)	--/-- CNPS List 2.1 MSCP Covered	Moderate to high. Seasonally dry drainages and upland adjacent to riparian habitat is preferred habitat. In the Tijuana River Valley, grows in a cobbly ecotone with sage scrub upslope and disturbed broom baccharis and southern willow scrub near the watercourse. Species reported in the general vicinity of Map Nos. 126-127 (CDFG 2003).
Sea dahlia (<i>Coreopsis maritima</i>)	--/-- CNPS List 2.2	Low. Habitat is coastal bluff scrub.
San Diego sand-aster (<i>Corethrogyne filaginifolia</i> var. <i>incana</i>)	--/-- CNPS List 1B.1	Low. Typically occurs in coastal bluff scrub and coastal chaparral, neither of which occurs within the study area. Species reported in the general vicinity of Map Nos. 138-139 (CDFG 2003).
Del Mar Mesa sand-aster (<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>)	--/-- CNPS List 1B.1 MSCP Covered	Low. Found in sandy and disturbed areas within southern maritime chaparral. Species reported within the general vicinity of Map Nos. 6-11 (CDFG 2003).
Tecate cypress (<i>Cupressus forbesii</i>)	--/-- CNPS List 1B.1 MSCP Covered	None. Closed-cone coniferous forest and southern mixed chaparral, particularly on Otay Mountain.
Blochman's dudleya (<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>)	--/-- CNPS List 1B.1 MSCP Covered	Low to moderate. Dry, stony places associated with coastal sage scrub or chaparral near the coast. Species reported in the general vicinity of Map Nos. 133-134 (CDFG 2003).
Sticky dudleya (<i>Dudleya viscida</i>)	--/-- CNPS List 1B.2 MSCP Covered	Low. This conspicuous succulent perennial grows primarily on very steep north-facing slopes. Species reported in the general vicinity of Map Nos. 82-83 (CDFG 2003).

Table 4.3-5 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Palmer's goldenbush (<i>Ericameria palmeri</i> ssp. <i>palmeri</i>)	--/-- CNPS List 2.2 MSCP Covered	Moderate to high. This sizeable shrub grows along coastal drainages in mesic chaparral sites, or rarely in Diegan coastal sage scrub. Occasionally occurs as a hillside element (usually at higher elevations inland on north-facing slopes). Species reported in the general vicinity of Map Nos. 65-66 and 76-80 (CDFG 2003).
Round-leaved filaree (<i>Erodium macrophyllum</i>)	--/-- CNPS List 1B.1	Moderate. Clay soils in open areas of grassland or sage scrub in coastal valleys.
Coast wallflower (<i>Erysimum ammophilum</i>)	--/-- CNPS List 1B.2 MSCP Covered	Moderate. Coastal dunes and coastal strand. Species reported in the general vicinity of Map Nos. 6, and 82-83 (CDFG 2003).
Cliff spurge (<i>Euphorbia misera</i>)	--/-- CNPS List 2.2	Very low. Occurs in maritime succulent scrub, which does not occur within the study area.
San Diego barrel cactus (<i>Ferocactus viridescens</i>)	--/-- CNPS List 2.1 MSCP Covered	High. Occurs in open coastal sage scrub, often at the crown of hillsides or in association with vernal pools. Species reported in the general vicinity of Map Nos. 12, 70, 76-80, 84, and 101 (CDFG 2003).
Palmer's frankenia (<i>Frankenia palmeri</i>)	--/-- CNPS List 2.1	Low. This low-growing shrub grows on coastal salt marsh periphery, but the only known extant native population in the U.S. is in Chula Vista (Reiser 2001).
Mexican flannelbush (<i>Fremontodendron mexicanum</i>)	FE/SR CNPS List 1B.1	Very low. This large bush occurs in closed-cone coniferous forest and southern mixed chaparral in Otay Mountain habitats.
Orcutt's hazardia (<i>Hazardia orcuttii</i>)	--/ST CNPS List 1B.1	None. Open chaparral with chamise. The only known U.S. site where this species occurs is in Encinitas (Reiser 2001), as this species is primarily found in Baja California.
Ramona horkelia (<i>Horkelia truncata</i>)	--/-- CNPS List 1B.3	Low. A species limited to gabbro soils occurring in chaparral communities (usually chamise chaparral).
Decumbent goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	--/-- CNPS List 1B.2	Low to moderate. Presumed to utilize coastal sage scrub habitat intermixed with grassland and is more partial to clay soils than other closely related varieties.
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	--/-- CNPS List 1B.1	High. Found in coastal salt marshes and vernal pools (Reiser 2001). Species reported in the general vicinity of Map Nos. 6-12 (CDFG 2003).

Table 4.3-5 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Robinson's pepper grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)	--/-- CNPS List 1B.2	Moderate. This annual herb grows in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy or along creeks. Species reported in the general vicinity of Map No. 101 (CDFG 2003).
Gander's pitcher-sage (<i>Lepechinia ganderi</i>)	--/-- CNPS List 1B.3 MSCP Covered	Low. Found in metavolcanic-derived soils in chaparral.
Nuttall's lotus (<i>Lotus nuttallianus</i>)	--/-- CNPS List 1B.1 MSCP Covered	High. Occurs in coastal dune communities. Species reported near the mouth of the San Diego River, in the general vicinity of Map Nos. 55-57, and 82-83 (CDFG 2003).
Felt-leaved monardella (<i>Monardella hypoleuca</i> ssp. <i>lanata</i>)	--/-- CNPS List 1B.2 MSCP Covered	Low. Found in the chaparral understory, typically beneath mature stands of chamise in xeric situations.
Jennifer's monardella (<i>Monardella stoneana</i>)	--/-- CNPS List 1B.2	Low. Found in canyons around Otay and Tecate mountains.
Willow monardella (<i>Monardella linoides</i> ssp. <i>viminea</i>)	FE/SE CNPS List 1B.1 MSCP Covered	Moderate. Occurs in coastal and riparian scrub, especially in sandy washes (Reiser 2001). Species reported in the general vicinity of Map Nos. 18-19 (CDFG 2003).
San Diego goldenstar (<i>Muilla clevelandii</i>)	--/-- CNPS List 1B.1 MSCP Covered	Moderate. Occurs in grasslands, particularly in association with mima mounds and vernal pools. Species reported in the general vicinity of Map Nos. 53-54, 64-66, 84, and 126-127 (CDFG 2003).
Little mousetail (<i>Myosurus minimus</i> ssp. <i>apus</i>)	--/-- CNPS List 3.1	Very low. Occurs in vernal pool communities, which do not occur within the study area. Species reported in the general vicinity of Map Nos. 124-127 (CDFG 2003).
Spreading navarretia (<i>Navarretia fossalis</i>)	FT ² /-- CNPS List 1B.1	Low to moderate. Occurs in vernal pool communities, which were not observed within the study area. However, the species has been reported in the general vicinity of Map Nos. 47 and 123-127 (CDFG 2003), and species' critical habitat overlaps with portions of Map Nos. 124 and 126.
Coast woolly-heads (<i>Nemacaulis denudata</i> var. <i>denudata</i>)	--/-- CNPS List 1B.2	Moderate. Typically found in coastal dune communities.
Slender woolly-heads (<i>Nemacaulis denudata</i> var. <i>gracilis</i>)	--/-- CNPS List 2.2	Low. Well-developed dunes whether on the desert or rarely, along the coastal beaches. Species reported in the general vicinity of Map No. 128 (CDFG 2003).

Table 4.3-5 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Brand's phacelia (<i>Phacelia stellaris</i>)	--/-- CNPS List 1B.1	Moderate. Occurs in coastal bluff scrub and in sandy coastal sage scrub openings near the beach (Reiser 2001).
Torrey pine (<i>Pinus torreyana</i> ssp. <i>torreyana</i>)	--/-- CNPS List 1B.2 MSCP Covered	None. Occurs in closed-cone coniferous forest along the coast near Del Mar. Would likely have been detected within the study area if present.
Otay Mesa mint (<i>Pogogyne nudiscula</i>)	FE ² /SE CNPS List 1B.1	Low to moderate. Restricted to vernal pools on Otay Mesa and in northern Baja. Species reported in the general vicinity of Map Nos. 85, and 124-127 (CDFG 2003).
Nuttall's scrub oak (<i>Quercus dumosa</i>)	--/-- CNPS List 1B.1	Low to moderate. Occurs in chaparral or coastal sage scrub with relatively open canopy cover in flat terrain; on north-facing slopes, may grow in dense monotypic stands. Found in sandy or clay loam soils. Species could potentially occur in upland habitat adjacent to the Program facilities.
Small-leaved rose (<i>Rosa minutifolia</i>)	--/SE CNPS List 2.1 MSCP Covered	None. No known native U.S. populations remain; only known U.S. site occurred on periphery of coastal sage scrub in Otay Mesa and was transplanted into biological open space to make way for development.
San Miguel savory (<i>Satureja chandleri</i>)	--/-- CNPS List 1B.2 MSCP Covered	Low. Gabbro and metavolcanic soils in interior foothills, chaparral, and oak woodland
Rayless ragwort (<i>Senecio aphanactis</i>)	--/-- CNPS List 2.2	Low. Occurs in open coastal sage scrub, cismontane woodlands, and alkaline flats (Reiser 2001).
Bottle liverwort (<i>Sphaerocarpos drewei</i>)	--/-- CNPS List 1B.1	Low. Occurs under shrubs within coastal sage scrub and chaparral. Species reported in the general vicinity of Map Nos. 86 (CDFG 2003).
Purple stemodia (<i>Stemodia durantifolia</i>)	--/-- CNPS List 2.1	High. Small perennial herb typically found growing in wet sand along minor creeks and seasonal drainages. Species reported in the general vicinity of Map No. 64 (CDFG 2003).
Oil neststraw (<i>Stylocline citroleum</i>)	--/-- CNPS List 1B.1	Low to moderate. Coastal scrub areas and chenopod scrub in clay soils in the vicinity of oilfields.

Table 4.3-5 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
Estuary seablite (<i>Sueda esteroa</i>)	--/-- CNPS List 1B.2	High. Found on the periphery of coastal salt marsh, soils are usually mapped as tidal flats. Species reported in the general vicinity of Map Nos. 82-83, and 134 (CDFG 2003).
Parry's tetraococcus (<i>Tetraococcus dioicus</i>)	--/-- CNPS List 1B.2 MSCP Covered	Low. Gabbro soils in low growing chamise chaparral and sage scrub. Conditions are typically quite xeric with only limited annual growth.

Source: HELIX (2011)

¹Refer to Appendix D of Appendix D.1 of the PEIR for a listing and explanation of status and sensitivity codes

²As of the date of surrender, April 20, 2010, the City has relinquished coverage and does not rely on the City's Federal Incidental Take Permit (ITP) to authorize an incidental take of this vernal pool animal species. Upon completion of a Habitat Conservation Plan (HCP) for vernal pools, the City would enter into an Implementing Agreement in order to obtain species coverage and a Federal ITP for this species.

Sensitive Animal Species

The following four sensitive animal species were observed/detected within the study area during surveys and are described below.

The coastal California gnatcatcher (*Poliophtila californica californica*) is a federally-listed threatened species, state species of special concern, and MSCP Covered species. One individual was observed in Diegan coastal sage scrub on the slopes of the Encanto Channel near the post office. This species likely occurs in other areas of appropriate habitat near the mapped channels. CNDDDB records for this species are scattered throughout the City.

The northern harrier (*Circus cyaneus*) is a state species of special concern and MSCP Covered species. One individual was observed foraging over grassland near a drainage ditch in the Otay region. Few individuals are expected to occur within the actual study area as most areas are vegetated with trees and shrubs or are developed. Little appropriate habitat occurs along the mapped storm water facilities.

The yellow warbler (*Dendroica petechia brewsteri*) is a state species of special concern. Two individuals were heard calling in southern riparian forest along the San Diego River.

The little blue heron (*Egretta caerulea*) is a bird of conservation concern species. One individual was observed foraging in freshwater marsh habitat in Rose Creek near Mission Bay Drive. This species is very uncommon in the City and would not likely be found in other locations mapped for the Master Program study area.

Although not detected during the biological surveys, the federally and state listed endangered least Bell's vireo (*Vireo bellii pusillus*) and light-footed clapper rail (*Rallus longirostris levipes*), federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*), and California species of special concern

yellow-breasted chat (*Icteria virens*) also have been documented in or near portions of the study area. Additional sensitive animal species that were not observed or detected but have potential to occur within the study area are listed in Table 4.3-6.

Table 4.3-6		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
INVERTEBRATES		
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	FE ² /--	Low. Occurs in vernal pools and road basins on the mesas in San Diego County.
Quino checkerspot butterfly (<i>Euphydryas editha quino</i>)	FE/--	Very low. Occurs in open sage scrub and chaparral. Requires abundant nectar plants and dwarf plantain (<i>Plantago erecta</i>), the primary host plant. Not reported in the project study area (CDFG 2003).
Hermes copper butterfly (<i>Lycaena hermes</i>)	--/--	Low to moderate. Found in southern mixed chaparral and coastal sage scrub with mature spiny redberry (<i>Rhamnus crocea</i>), the larval host plant.
Wandering/saltmarsh skipper (<i>Panoquina errans</i>)	--/--	High. Coastal saltmarshes along river mouths and other brackish waters. Larval host plant is saltgrass (<i>Distichlis spicata</i>).
Riverside fairy shrimp (<i>Streptocephalus woottoni</i>)	FE ² /--	Low. Occurs in vernal pools and road basins on mesas in San Diego County.
VERTEBRATES		
Reptiles and Amphibians		
Silvery legless lizard (<i>Anniella pulchra pulchra</i>)	--/SSC	Moderate. Occurs in areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.
Arroyo toad (<i>Bufo californicus</i>)	FE/SSC MSCP Covered	Low. Found on banks with open-canopy riparian forest characterized by willows, cottonwoods, or sycamores; breeds in areas with shallow, slowly moving streams but burrows in adjacent uplands during dry months. No recorded CNDDB locations in the study area, and MSCP list of known locations does not include creeks in the study area.
Orange-throated whiptail (<i>Cnemidophorus hyperythrus</i>)	--/SSC MSCP Covered	High. Found in coastal sage scrub, chaparral, and riparian woodland as well as adjacent disturbed areas. Prefers areas with a matrix of open and shady areas with abundant termites (<i>Reticulitermes</i> sp.).

Table 4.3-6 (cont.)		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Reptiles and Amphibians (cont.)		
Red-diamond rattlesnake (<i>Crotalus exsul</i>)	--/SSC	Moderate. Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey. Suitable habitat occurs within the study area.
Coronado skink (<i>Eumeces skiltonianus interparietalis</i>)	--/SSC	Moderate. Found in grasslands, sage scrub, open chaparral, oak woodland, and coniferous forests, usually under rocks, leaf litter, logs, debris, or in the shallow burrows it digs.
San Diego horned lizard (<i>Phrynosoma coronatum</i> ssp. <i>blainvillei</i>)	--/SSC MSCP Covered	High. Found in coastal sage scrub and open chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil. Their occurrence typically tied to presence of harvester ants (<i>Pogonomyrmex</i> sp.), and they are generally excluded from areas invaded by Argentine ants (<i>Linepithema humile</i>).
Coast patch-nosed snake (<i>Salvadora hexalepis virgulte</i>)	--/SSC	Moderate. Primarily found in chaparral but also inhabits coastal sage scrub and areas of grassland mixed with scrub.
Western spadefoot (<i>Spea hammondi</i>)	--/SSC	Moderate. Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing.
Two-striped garter snake (<i>Thamnophis hammondi</i>)	--/SSC	High. Occurs along permanent and intermittent streams bordered by dense riparian vegetation but occasionally associated with vernal pools or stock ponds.
Birds		
Cooper's hawk (<i>Accipiter cooperi</i>)	--/SSC MSCP Covered	High. Found in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests. Widespread species expected to occur in several locations within project where trees are present.
Tricolored blackbird (<i>Agelaius tricolor</i>)	--/SSC MSCP Covered	Low to moderate. Marsh habitat near grasslands, pastures, and agricultural fields
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	--/SSC MSCP Covered	Moderate. Occurs in coastal sage scrub, chaparral, and shrubby grasslands.
Bell's sage sparrow (<i>Amphispiza belli belli</i>)	--/SSC	Low. Chaparral and sage scrub with modest leaf-litter on the ground. Largely eliminated from most coastal areas of San Diego County (Unitt 2004).

Table 4.3-6 (cont.)		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Birds (cont.)		
Golden eagle (<i>Aquila chrysaetos</i>)	--/SSC MSCP Covered	Low. Nesting occurs on cliff ledges or in trees on steep slopes, with foraging occurring primarily in grassland and sage scrub. Not usually observed near development.
Burrowing owl (<i>Athene cunicularia</i>)	--/SSC MSCP Covered	Low. Occurs in grasslands and open scrub habitats. At present, largely restricted to Otay Mesa and North Island. Majority of the study area likely too urbanized to support species.
Coastal cactus wren (<i>Campylorhynchus brunneicapillus sandiegensis</i>)	--/SSC MSCP Covered	Moderate. Occurs in coastal sage scrub and chaparral where there are large thickets of cactus in which they nest.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT/SSC MSCP Covered	Low. Found on beaches, dunes, and salt flats. Very little appropriate habitat within the study area.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	--/SE	Low to moderate. A rare and sporadic summer visitor to San Diego County, the cuckoo is found only in extensive stands of mature riparian woodland.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	FE/-- MSCP Covered	Low to moderate. This migratory species uses mature riparian woodland for nesting. As a breeding species, this flycatcher is restricted to modest/small colonies in San Diego County along the Santa Margarita River, San Luis Rey River, Whelan Lake, Guajome Lake, Couser Canyon, and Pala (Unitt 2004).
California horned lark (<i>Eremophila alpestris actia</i>)	--/SSC	Low. Occurs in open fields, grasslands, disturbed areas, and open sage scrub. Open habitat is uncommon in the study area.
Prairie falcon (<i>Falco mexicanus</i>)	--/SSC	Low. Nests on cliff or bluff ledges or occasionally in old hawk or raven nests; forages in grassland or desert habitats. All known nesting locations are at least 23 miles from the coast (Unitt 2004); therefore, study area is likely outside species' range.
Yellow-breasted chat (<i>Icteria virens</i>)	--/SSC	High. Habitat is shrubby willows and riparian woodland. Is likely to occur along willow-dominated drainages within the City, particularly within the MHPA.
Least bittern (<i>Ixobrychis exilis</i>)	--/SSC	Moderate. Found in marshes and other wetland habitat.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	--/ST	Very low. Found in wetland habitats; presumed extirpated from San Diego County.

Table 4.3-6 (cont.)		
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Birds (cont.)		
Osprey (<i>Pandion heliaetus</i>)	--/SSC	Low. Coasts and inland lakes with open water and a supply of fish.
Belding's savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	--/SE MSCP Covered	Moderate. Restricted to coastal salt marshes dominated by pickleweed.
Light-footed clapper rail (<i>Rallus longirostris levipes</i>)	FE/SE	High potential along San Diego River near the coast and in the southern reaches of Rose Creek; low potential elsewhere. Coastal salt marshes, especially those dominated by cordgrass (<i>Spartina</i> sp.), but have been known to use brackish and freshwater sites.
Western bluebird (<i>Sialia mexicana</i>)	--/-- MSCP Covered	High. Scattered distribution in central and western portions of San Diego County. Has been observed in ruderal habitat near riparian forest along San Diego River and is likely to occur in portions of the study area.
California least tern (<i>Sternula antillarum browni</i>)	FE/SE MSCP Covered	Low. Coastal areas adjacent to the ocean. Very little appropriate habitat within the study area.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE/SE MSCP Covered	High. Occurs in mature riparian forest and woodland, as well as riparian scrub. CNDDDB records include areas along or near the San Diego River, Smuggler's Gulch, Los Peñasquitos Creek, and Map No. 164. Critical habitat for this species occurs in the Smuggler's Gulch vicinity.
Mammals		
Pallid bat (<i>Antrozous pallidus</i>)	--/SSC	Moderate. Deserts and canyons. Daytime roosts in buildings, crevices; less often in caves, mines, hollow trees, and other shelters.
Dulzura pocket mouse (<i>Chaetodipus californicus femoralis</i>)	--/SSC	Low. Typically found in chaparral, especially where it intergrades with grasslands.
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	--/SSC	Moderate. Occurs in open coastal sage scrub, particularly in open, weedy areas with sandy substrates.
Mexican long-tongued bat (<i>Choeronycteris mexicana</i>)	--/SSC	High. Occurs in scrublands and forests, especially canyons with riparian vegetation. Roosts in mines, caves, and buildings. Sporadically reported through much of San Diego County (CDFG 2003).

Table 4.3-6 (cont.) LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	STATUS¹	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Mammals (cont.)		
Spotted bat (<i>Euderma maculatum</i>)	--/SSC	Low. Mountainous regions with ponderosa pines. Roosts primarily in crevices in rocky cliffs and canyons.
Western mastiff bat (<i>Eumops perotis californicus</i>)	--/SSC	Moderate. Chaparral and where coast live oaks are found. Also occurs in arid, rocky areas, cliffs, and canyons.
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	--/SSC	Moderate. Prefers forested areas adjacent to ponds and streams. Roosts under loose bark, in tree hollows and buildings.
Hoary bat (<i>Lasiurus cinereus</i>)	--/SSC	Moderate. Evergreen forests and wooded areas.
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	--/SSC	Moderate. Occurs primarily in open sage scrub, chaparral, grasslands, croplands, and disturbed habitat with at least some shrub cover present.
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	--/SSC	Moderate. Occurs in open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.
Pocketed free-tailed bat (<i>Nyctinomys femorosaccus</i>)	--/SSC	Low. Occurs in arid scrublands, including chaparral; roosts in crevices in cliff faces.
Big free-tailed bat (<i>Nyctinomys macrotus</i>)	--/SSC	Low. Occurs in rocky scrublands and woodlands, and roosts in rocky cliff faces. Reported sporadically in variety of San Diego County locations (CDFG 2003).
Pacific pocket mouse (<i>Perognathus longimembris pacificus</i>)	FE/SSC	Low. Fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.
American badger (<i>Taxidea taxus</i>)	--/SSC MSCP Covered	Low. Occurs in open plains and prairies, farmland, and sometimes edges of woods.

Source: HELIX (2011)

¹Refer to Appendix D of Appendix D.1 of the PEIR for a listing and explanation of status and sensitivity codes

²As of the date of surrender, April 20, 2010, the City has relinquished coverage and does not rely on the City's Federal Incidental Take Permit (ITP) to authorize an incidental take of this vernal pool animal species. Upon completion of a Habitat Conservation Plan (HCP) for vernal pools, the City would enter into an Implementing Agreement in order to obtain species coverage and a Federal ITP for this species.

Regional and Regulatory Context

Multiple Species Conservation Program

The City's MSCP Subarea Plan has been prepared to meet the Habitat Conservation Plan requirements of the Federal Endangered Species Act (FESA) and the California Natural

Communities Conservation Planning (NCCP) Act of 1992. The Subarea Plan is consistent with the NCCP and describes how the evaluation of proposed development projects relative to the City's portion of the MSCP Preserve (the Multi-Habitat Planning Area [MHPA]) will be implemented. The Plan was adopted in 1997, allowing the City to issue take permits at the local level. Approximately 56,831 acres of habitat are designated as the City's portion of the MHPA, of which approximately 90 percent is to be preserved and the remaining 10 percent may be developed.

Under the FESA, an incidental take permit is required when non-Federal activities would result in "take" of the threatened or endangered species. A Habitat Conservation Plan (HCP) must accompany an application for Federal Incidental Take Permit (ITP). Take authorization for federally listed wildlife species covered in the HCP shall generally be effective upon approval of the HCP.

As of the date of surrender, April 20, 2010, the City has relinquished coverage and does not rely on the City's Federal ITP to authorize an incidental take of the two vernal pool animal species and five vernal pool plant species. Upon completion of a Habitat Conservation Plan (HCP) for vernal pools, the City would enter into an Implementing Agreement in order to obtain species coverage and a Federal ITP for the seven vernal pool species

The MHPA is intended to link all core biological areas into a regional wildlife preserve. Many of the natural creeks included in the storm water system encompassed by the project area fall within the MHPA. Approximately 561.50 acres of the project study area are within the MHPA, including portions of the following named channels: San Diego River, Los Peñasquitos Creek, Soledad Creek, Rose Creek, Florida Canyon, Alvarado Creek, Chollas Creek, South Chollas Creek, and Smuggler's Gulch. HUs supporting habitat within the MHPA for the project area include: Peñasquitos, Pueblo San Diego, San Diego, and Tijuana.

MSCP policies and guidelines that are relevant to the proposed maintenance activities are identified and evaluated in Table 4.1-3 in Subchapter 4.1, Land Use.

Wildlife Corridors

Wildlife corridors can be local or regional in scale; their functions may vary temporally and spatially based on conditions and species presence. Wildlife corridors represent areas where wildlife movement is concentrated due to natural or anthropogenic constraints. Local corridors provide access to resources such as food, water, and shelter. Animals use these corridors, which are often hillsides or tributary drainages, to move between different habitats. Regional corridors provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations by linking two or more large habitats.

Approximately 561.50 acres of the study area are within the City's MHPA. The MHPA in these portions of the project provides connectivity through several creeks and tributary drainages, as well as the San Diego River corridor. Several storm water channels within the Master Program are likely to function as wildlife corridors including but not necessarily limited to the San Diego

River, Smuggler's Gulch, Rose Creek, Chollas Creek, Soledad Creek, and Los Peñasquitos Creek.

4.3.2 Impacts

This analysis addresses potential impacts resulting from maintenance of the storm water facilities included in the proposed Master Program including access roads, stockpiling and staging areas.

The following analysis is intended to provide a programmatic estimate of the magnitude of impacts to biological resources that could occur from the various maintenance activities anticipated to result from implementation of the proposed Master Program. The impacts are based on the assumption that disturbance would be normally limited to the bottom and adjacent two feet of bank area when the top-of-bank to top-of-bank width is 20 feet or more. For facilities with a width less than 20 feet, it was assumed that the bottom and all of the banks would be disturbed in order to maximize the ability of these narrower facilities to convey flood water. This analysis includes potential impacts associated with bringing equipment into the storm water facilities on access roads which have been identified for each facility included in the Master Program. The estimated disturbance widths are identified in Table 3-1.

The analysis characterizes impacts as direct or indirect. An impact is considered direct when the primary effect is removal of existing habitat and/or species. Direct impacts would result from clearing of vegetation and removal of accumulated sediment and debris. Indirect impacts occur when secondary effects of adjacent activities, such as noise, reduced water quality, dust, or non-native plant invasion may adversely affect adjacent biological resources. The magnitude of an indirect impact may be the same as a direct impact; however, the effect usually takes a longer time to become apparent because indirect impacts are related to changes in animal behavior or transition of habitats from one type to another which typically takes longer to manifest.

Significance Criteria

According to the City's Significance Determination Thresholds (2011), impacts to biological resources would be significant if the project would:

- Cause a substantial adverse impact on any Tier I, Tier II, Tier IIIA, or Tier IIIB habitats, as identified in the Biology Guidelines of the Land Development manual or other sensitive natural community identified in local or regional plans, policies, regulation, or by the CDFG or USFWS;
- Cause a substantial adverse impact on more than 0.01 acre of wetlands (including, but not limited to marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means;
- Cause a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFG or USFWS;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors; including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites; and/or
- Cause a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region.

Analysis of Impacts

Issue 1: Would the Project impact sensitive habitat, including but not limited to City, State, or federally regulated wetlands through direct removal, filling, hydrological interruption, or other means?

Direct Impacts

Impacts on biological resources associated with the proposed Master Program would be related to disturbance to resources located within the storm water facilities to be maintained as well as dewatering, access and staging/stockpiling areas. In addition, impacts could occur from implementation of mitigation measures which involve interim erosion control (e.g. check dams) or offsite enhancement, restoration or creation of habitat to offset impacts from maintenance.

Quantifying the impact of offsite habitat enhancement, restoration or creation is considered speculative pursuant to Section 15145 of the CEQA Guidelines. As discussed in mitigation section of this subchapter, both the amount and location of offsite mitigation are dependent on a number of factors which cannot be forecast at this time. However, impacts would normally consist of temporary to permanent displacement of the vegetation and wildlife which occur on the offsite mitigation site prior to implementation. As offsite mitigation traditionally is limited to areas which do not support high quality biological resources, it is anticipated that offsite mitigation would not result in a significant impact on biological resources. In fact, mitigation is expected to result in improved biological resources once established. In any case, the potential effects of the offsite mitigation would be evaluated in accordance with CEQA. The CEQA process would identify mitigation measures for any impacts to biological resources which are found to be significant from offsite mitigation.

Similarly, quantifying the impact of water quality control measures is difficult to determine. As discussed in Subchapter 4.8, Water Quality, temporary check dams or similar features may be required to reduce water quality impacts from maintenance. The initial impact of these features would be estimated and mitigated as part of the mitigation program developed for the overall maintenance activity which would include installation of the water quality control feature. As temporary facilities, they are intended to be removed when no longer required. For example, once the vegetation has become re-established, it is anticipated that check dams and other interim facilities would be removed. Where these features are located within native vegetation, removal may cause minimal impact in the course of removing the feature. However, these impacts would

not be significant in light of the fact that mitigation would have already occurred for the installation process and because disturbed vegetation would be expected to quickly re-establish.

Quantifying the impact of maintenance on biological resources would depend on the results of a site-specific IHHA required to be completed for each maintenance activity. As discussed in Chapter 3.0 Project Description, the IHHA would identify the minimum amount of vegetation required to be removed to improve the ability of storm water facilities to convey floodwater. However, in order to provide a programmatic basis for evaluating the impacts of maintenance on biological resources, it is assumed that disturbance would be limited to the channel bottom and the adjacent two feet whenever a channel has a bank-to-bank width of over 20 feet. Where the overall width is less than 20 feet, it is assumed that the channel banks as well as bottom would have to be cleared to maximize floodwater conveyance. Table 3-1 included in Chapter 3.0, Project Description, quantifies the assumed width of disturbance in each channel based on these parameters.

Based on the width of disturbance identified in Table 3-1, maintenance activities described in the Master Program would affect up to approximately 41.62 acres of vegetated wetland habitat and 37.08 acres of unvegetated earthen-bottom streambed/natural flood channel. An estimated 61.3 acres of upland habitat could be impacted, of which approximately 50.3 acres are developed (Table 4.3-7). This table quantifies the impacts by HU. A segment by segment breakdown of wetland impacts is provided in Appendix D.1. As many as approximately 14.59 acres of wetland vegetation impacts, 29.23 acres of unvegetated stream impacts and 3.1 acres of upland (excluding developed land) impacts would occur within the MHPA.

Approximately 10.6 acres of wetland impacts and 9.2 acres of unvegetated natural flood channel impacts would occur within the coastal overlay zone. However, in reality, the contemplated maintenance activities would occur over an extended period of time and, thus, the estimated areas of impacts would not occur at any one time. The amount of vegetation that may be impacted would be dependent on the results of the limits of disturbance shown on the IMP for each facility.

Wetland/Riparian Vegetation Communities

As indicated earlier, maintenance activities would impact up to approximately 41.62 acres of wetland/riparian habitats including 4.95 acres of southern riparian forest (including disturbed), 0.09 acre of southern sycamore riparian woodland, 7.49 acres of southern willow scrub (including disturbed), 1.99 acres of mule fat scrub (including disturbed), 0.15 acre of riparian scrub, 17.90 acres of freshwater marsh (including disturbed), 1.57 acres of coastal saltmarsh, 0.51 acre of coastal brackish marsh, and 6.97 acres of disturbed wetland (Table 4.3-7). In addition, 37.08 acres of streambed/natural flood channel would be impacted. The wetland information associated within each specific channel is contained in Appendix D.1.

While dewatering by retaining water upstream or diverting it in a pipe during maintenance would eliminate surface water from the area being maintained, this condition would not result in significant impacts on biological resources that would be any greater than the disruption caused by the maintenance activity itself. Furthermore, the diversion would be short-term in nature, generally lasting less than four weeks.

HU	Wetlands Outside MHPA ²											Total
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	STM/ NFC	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.02	0.01	0.19
Peñasquitos	0.00	0.00	1.60	0.35	0.00	4.66	0.00	0.19	0.05	0.00	1.35	8.20
San Diego	0.00	0.09	0.75	0.00	0.00	2.96	0.00	0.00	0.00	0.27	0.20	4.27
Pueblo San Diego	0.00	0.00	1.68	0.46	0.15	4.36	0.00	0.32	0.00	4.78	6.29	18.04
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02
Otay	0.00	0.00	0.28	0.00	0.00	1.73	0.00	0.00	0.00	0.06	0.00	2.07
Tijuana	0.00	0.00	0.50	0.01	0.00	1.04	0.00	0.00	0.00	0.54	0.00	2.09
Non-MHPA Subtotal	0.00	0.09	4.81	0.82	0.15	14.91	0.00	0.51	0.05	5.69	7.85	34.88
HU	Wetlands Within MHPA ²											Total
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	STM/ NFC	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Peñasquitos	0.00	0.00	1.90	0.17	0.00	1.81	0.00	1.06	0.46	0.04	3.90	9.34
San Diego	4.95	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.11	22.88	28.94
Pueblo San Diego	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Otay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tijuana	0.00	0.00	0.78	1.00	0.00	0.18	0.00	0.00	0.00	1.13	2.45	5.54
MHPA Subtotal	4.95	0.00	2.68	1.17	0.00	2.99	0.00	1.06	0.46	1.28	29.23	43.82
WETLANDS TOTAL	4.95	0.09	7.49	1.99	0.15	17.90	0.00	1.57	0.51	6.97	37.08	78.70

Table 4.3-7 (cont.) ESTIMATED AREA OF VEGETATION COMMUNITIES AFFECTED ¹								
HU	Uplands Outside MHPA ²							Total
	Tier II	Tier IIIA	Tier IIIB	Tier IV				
	DCSS	SMC	NNG	EW	NNV/ ORN	DH/ RUD	DEV	
San Dieguito	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
Peñasquitos	0.0	0.1	0.2	0.0	0.9	0.2	12.8	14.2
San Diego	0.4	0.0	0.3	0.1	0.4	0.7	7.0	8.9
Pueblo San Diego	1.8	0.0	1.4	0.0	0.8	1.1	25.7	30.8
Sweetwater	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
Otay	0.0	0.0	0.1	0.0	0.4	0.9	0.8	2.2
Tijuana	0.0	0.0	0.3	0.0	0.2	0.1	1.5	2.1
Non-MHPA Subtotal	2.2	0.1	2.3	0.1	2.7	3.0	49.4	59.8
HU	Uplands Within MHPA ²							Total
	Tier II	Tier IIIA	Tier IIIB	Tier IV				
	DCSS	SMC	NNG	EW	NNV/ ORN	DH/ RUD	DEV	
San Dieguito	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peñasquitos	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.6
San Diego	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
Pueblo San Diego	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweetwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Otay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tijuana	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
MHPA Subtotal	0.0	0.1	0.2	0.1	0.1	0.1	0.9	1.5
UPLANDS TOTAL	2.2	0.2	2.5	0.2	2.8	3.1	50.3	61.3

¹Totals reflect rounding

²Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CSM=coastal salt marsh, DCSS=Diegan coastal sage scrub, DH/RUD=disturbed habitat/ruderal, DEV=developed, DW=disturbed wetland, EW=eucalyptus woodland, FWM=freshwater marsh, MFS=mule fat scrub, NFC=City natural flood channel, NNG=non-native grassland, NNV/ORN=non-native vegetation/ornamental, RS=riparian scrub, SMC=southern mixed chaparral, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, STM=CDFG streambed (includes open water habitat), SWS=southern willow scrub

Jurisdictional Areas (Corps, CDFG, and City)

Up to approximately 9.22 acres of wetlands and 42.98 acres of non-wetland WUS subject to Corps jurisdiction would be impacted within the channel areas (Table 4.3-8). Appendix D.1 contains a detailed estimate of Corps jurisdictional impacts by channel.

Up to approximately 41.62 acres of wetlands/riparian habitat and 37.08 acres of unvegetated streambed subject to CDFG and City jurisdiction would be affected by maintenance activities (Table 4.3-9). This includes concrete-lined channels that support wetland vegetation. Appendix .1 contains a detailed estimate of CDFG jurisdictional impacts by channel.

**Table 4.3-8
 ESTIMATED CORPS JURISDICTIONAL AREAS (WUS) AFFECTED (acre[s])¹**

HU ²	Wetlands ³											Non-wetland WUS		TOTAL
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	Total Wetland Impacts	Earthen bottom	Concrete bottom	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	1.19	1.21
Peñasquitos	0.00	0.00	1.94	0.08	0.00	5.55	0.00	1.25	0.31	0.01	9.14	5.15	10.61	24.90
San Diego	4.95	0.00	0.30	0.00	0.00	2.76	0.00	0.00	0.00	0.02	8.03	23.30	5.47	36.80
Pueblo San Diego	0.00	0.00	0.75	0.19	0.06	2.74	0.00	0.32	0.00	2.90	6.96	7.38	14.13	28.47
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26
Otay	0.00	0.00	0.28	0.00	0.00	1.46	0.00	0.00	0.00	0.05	1.79	0.00	0.47	2.26
Tijuana	0.00	0.00	0.77	0.22	0.00	1.06	0.00	0.00	0.00	1.24	3.29	3.67	1.34	8.30
TOTAL	4.95	0.00	4.04	0.49	0.06	13.58	0.00	1.57	0.31	4.22	29.22	39.51	33.47	72.98

Source: HELIX (2011)

¹Totals reflect rounding

²The HUs correspond to the following Storm Water Facility map pages in Appendix D.1: San Dieguito HU=Maps 1-3, 169; Peñasquitos HU=Maps 4-46, 55-57, 163-168, 170-172; San Diego HU=Maps 47-54, 58-66, 81-83, 140-161; Pueblo San Diego HU=Maps 67-80, 84-121; Sweetwater HU=Map 122; Otay HU=Maps 131-135; Tijuana HU=Maps 123-130, 136-139

³Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CSM=coastal saltmarsh, DW=disturbed wetland, FWM=freshwater marsh, MFS=mule fat scrub, RS=riparian scrub, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, and SWS=southern willow scrub

**Table 4.3-9
 ESTIMATED CDFG AND CITY JURISDICTIONAL AREAS AFFECTED (acre[s])¹**

HU ²	Wetland/Riparian Habitat ³											Drainage	Total CDFG/City
	SRF	SRW	SWS	MFS	RS	FWM	CAM	CSM	CBM	DW	Total Wetland/Riparian Impacts	STM/NFC	
San Dieguito	0.00	0.00	0.00	0.00	0.00	0.16	0.00	00.00	0.00	0.02	0.18	0.01	0.19
Peñasquitos	0.00	0.00	3.50	0.52	0.00	6.47	0.00	1.25	0.51	0.04	12.29	5.25	17.54
San Diego	4.95	0.09	0.75	0.00	0.00	3.97	0.00	0.00	0.00	0.38	10.14	23.08	33.22
Pueblo San Diego	0.00	0.00	1.68	0.46	0.15	4.36	0.00	0.32	0.00	4.78	11.75	6.29	18.04
Sweetwater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.02
Otay	0.00	0.00	0.28	0.00	0.00	1.73	0.00	0.00	0.00	0.06	2.07	0.00	2.07
Tijuana	0.00	0.00	1.28	1.01	0.00	1.21	0.00	0.00	0.00	1.67	5.17	2.45	7.62
TOTAL	4.95	0.09	7.49	1.99	0.15	17.90	0.00	1.57	0.51	6.97	41.62	37.08	78.70

Source: HELIX (2011)

¹Totals reflect rounding

²The HUs correspond to the following Storm Water Facility map pages in Appendix D.1: San Dieguito HU=Maps 1-3, 169; Peñasquitos HU=Maps 4-46, 55-57, 163-168, 170-172; San Diego HU=Maps 47-54, 58-66, 81-83, 140-161; Pueblo San Diego HU=Maps 67-80, 84-121; Sweetwater HU=Map 122; Otay HU=Maps 131-135; Tijuana HU=Maps 123-130, 136-139

³Habitat acronyms: CAM=cismontane alkali marsh, CBM=coastal brackish marsh, CLOW=coast live oak woodland, CSM=coastal saltmarsh, DW=disturbed wetland, FWM=freshwater marsh, MFS=mule fat scrub, NFC= City natural flood channel, RS=riparian scrub, SRF=southern riparian forest, SRW=southern sycamore riparian woodland, SWS=southern willow scrub, and STM=CDFG streambed (includes open water habitat)

⁴CDFG Acreage

⁵City Acreage

Upland Vegetation Communities

Maintenance activities would impact up to 4.9 acres of sensitive upland habitat, including 2.2 acres of Diegan coastal sage scrub (including disturbed), 0.2 acre of southern mixed chaparral, and 2.5 acres of non-native grassland (Table 4.3-7). Impacts to these communities would be significant.

Impacts of up to 56.4 acres of non-sensitive uplands (0.2 acre of eucalyptus woodland, 2.8 acres of non-native vegetation/ornamental, 3.1 acres of disturbed habitat/ruderal, and 50.3 acres of developed land) would not be considered significant under the City's Biology Guidelines.

Wildlife

The loss of vegetation would have a concomitant impact on the animal populations that utilize these vegetation communities for activities including foraging, nesting, and movement. For example, amphibians, reptiles, birds and mammals have sufficient mobility that they can move into adjacent habitat. However, most of the animals associated with storm water facilities would be able to relocate into areas up- and down-stream of maintenance activities. Once the vegetation begins to re-establish itself after maintenance, these animals would be able to move back into the maintained areas. As a result, impacts to these animals would not be significant.

Unlike other animals, BMI are not able to readily move into adjacent habitat in response to maintenance activities because they are confined to sediments. In order to determine the potential effect of maintenance on BMI, an evaluation was done by William Isham (Weston Solutions, Inc.), who is well-versed in various aspects of benthic invertebrates. His findings are contained in Appendix D.4 and summarized below.

BMI are important components of ecosystems associated with streambeds. They provide a valuable food source for wildlife including fish, birds, and small mammals and also play an important role in the breakdown of organic matter. BMI typically include the larval and adult stages of aquatic insects as well as all life stages of non-insects (e.g., amphipods, crayfish, and flatworms). No sensitive BMI are expected to occur within the storm water facilities included in the Master Program. Sensitive BMI are restricted to more pristine, non-urbanized sites and have either been eliminated from the urban environment or were never present due to pre-development hydrologic limitations.

The capacity of storm water facilities to support BMI is based on two primary factors: surface water flow and substrate characteristics. The most favorable substrate consists of fine sediments. Low surface flows are the most favorable for BMI. High surface water flows result in scouring which displaces BMI residing in the displaced substrate.

Maintenance of storm water facilities would impact BMI. Direct impacts would occur from excavation of sediment material to increase the capacity of facilities to convey floodwater. BMI occurring within this excavated material would be destroyed. In addition, as discussed in Subchapter 4.8, Water Quality, the removal of vegetation during maintenance has the potential to accelerate erosion of the underlying substrate. When erosion occurs, BMI residing in this

substrate material would likely experience high mortality in the process of being transported downstream with transported sediment. On the other hand, the removal of sediments containing pollutants could positively impact BMI by eliminating a deterrent to successful population of sediment. In addition, removing fine-grain sediment and exposing more suitable substrate material could positively affect BMI.

Although maintenance would impact BMI, the impacts would not be significant. Physical disruption to a limited section of a stream would generally have a short-term, quickly reversible impact to BMI communities. This has been documented in numerous situations in San Diego County in recent years. Appendix D.4 cites a streambed restoration project of Forester Creek in the City of Santee as an example of the resilience of BMI. Restoration in Forester Creek began with a complete removal of the stream substrate for a length of approximately 800 meters. Construction activities took approximately one and a half years to complete. In the course of this work, surveys of BMI were conducted including two pre-restoration surveys, two surveys during restoration, and two post-restoration surveys. Table 1 of Appendix D.4 indicates that BMI community quality, richness, and abundance were affected to a moderate degree by disruption of the streambed, but also indicates that even major disturbance does not eliminate the BMI community altogether. Impacts on the BMI community were entirely reversed when the site had revegetated.

The example of Forester Creek would, however, be different from a scenario that would be encountered in concrete-lined channels. In some concrete channels, eroded sediment and cobble from upstream sources have accumulated on the channel bottom and, over time, vegetation may become established. As a result, what was once a very poor substrate for BMI, becomes habitat of a much higher quality. Channel maintenance activities that remove sediment and vegetation would have a greater and more long-lasting impact on the BMI community than in a more natural streambed. However, since the accumulation of sediment would likely occur soon after maintenance and remain until the next maintenance event, no significant impacts on BMI would occur from maintenance in concrete channels.

Indirect Impacts

Potential indirect impacts from maintenance activities would normally be associated with secondary effects, including habitat insularization, water quality, lighting, noise, roadkill, exotic plant species, fugitive dust, and human intrusion. The magnitude of an indirect impact may be the same as a direct impact, but the effect usually takes longer to become apparent because indirect impacts are related to changes in animal behavior or transition of habitats from one type to another which typically takes longer to manifest.

Habitat Insularization

Habitat insularization is fragmentation of large habitat areas into smaller “islands” effectively isolated from one another. Such fragmentation presents barriers to wildlife movement and breeding, splits plant and animal populations, and increases edge effects. Habitat insularization is often associated with local species extinctions because smaller habitat areas support relatively fewer species than larger ones.

No habitat insularization impacts are expected to occur as a result of proposed maintenance activities because the activities would not result in the isolation of any habitat areas. The majority of the storm water facilities occur in urban areas where surrounding development has substantially reduced the amount of native habitat adjacent to these facilities. Maintenance of storm water facilities would not change the conditions which surround the facilities. Maintenance within areas surrounded by native habitat would not result in habitat insularization. The drainage courses would continue to accommodate wildlife movement and riparian scrub would be expected to re-establish within six to 12 months following maintenance. Thus, maintenance would not result in any substantial increase in habitat insularization.

Water Quality

Runoff is often associated with sedimentation and pollution, which have the potential to significantly impact water quality in adjacent and downstream areas. The use of petroleum products (e.g., fuels, oils, and lubricants) by maintenance equipment could potentially contaminate surface water and significantly impact biological resources. As discussed in Subchapter 4.8, Water Quality, the removal of wetland vegetation occurring as part of the Master Program may result in a decrease in pollutant uptake by plants, as vegetation in the channel bottoms would be removed. As indicated in Subchapter 4.8, Water Quality, additional impacts to water quality could occur as a result of disturbance of sediment on the drainage bottom during clearing activities, and subsequent increases in turbidity if water is present at the time of maintenance. Decreased water quality could significantly impact downstream biological resources by impacting both plants and animals.

Lighting

Night lighting exposes adjacent wildlife species to an unnatural light regime. This lighting may alter their behavior patterns, and consequently result in a loss of species diversity. Except in the case of emergency maintenance, maintenance activities would take place during daylight hours. Due to the fact that emergency maintenance would be limited to one to two weeks, night-time lighting would represent a less than significant impact.

Noise

Project-related noise from such sources as machinery potentially used for clearing (e.g., bulldozers, Gradalls, etc.) could result in a temporary impact to wildlife. Noise-related impacts would be significant if a sensitive species would be displaced from their nests or territories and fail to breed. The potential exists for maintenance noise to have a significant impact on sensitive wildlife.

Roadkill

Roadkill is not a significant issue for this project, as all maintenance machinery would be slow-moving and the project would not open up access roads for use by the general public.

Exotic Plant Species

Non-native plants could colonize areas disturbed by maintenance and potentially spread into the adjacent preserve areas. Such invasions would displace native plant species, reducing diversity, increasing flammability and fire frequency, change ground and surface water levels, and adversely affect the native wildlife that are dependent on native vegetation.

Clearing of native wetland vegetation within the channels and ditches could result in subsequent colonization by invasive, non-native vegetation such as giant reed because this species is so well-adapted to displacing native wetland species. However, many of the channels and ditches already support a variety of non-native wetland-affiliated species growing in conjunction with native species. Clearing of the channels would remove both native and non-native species, and quick growing species such as cattails would be expected to recolonize many of the wetter areas over the short-term. Invasion by non-native plants in areas where they previously did not exist would be considered a significant impact.

Fugitive Dust

Fugitive dust produced by maintenance would disperse onto vegetation and cause adverse effects to sensitive vegetation. A continual cover of dust would reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. In turn, this would affect animals dependent on these plants. Fugitive dust is a temporary maintenance impact and, therefore, not considered a significant impact to biological resources.

Human Intrusion

Increases in human activity in natural areas would result in degradation of sensitive vegetation communities by fragmenting habitat, forming edges, and removing existing plants. In addition, illegal dumping of landscape debris and trash may occur. No significant impacts would occur as a result of human activity given that many of the areas are already used as homeless encampments and for illegal dumping. Maintenance activities in the storm water facilities are not expected to result in an increase in these activities.

Significance of Impacts

Sensitive habitats that would be directly impacted include wetland and upland vegetation. As the maintenance would primarily occur within drainage courses, wetland communities would be the most impacted. An estimated 41.62 acres of different wetland vegetation types and 37.08 acres of unvegetated channel bottom would be impacted by maintenance. Impacted wetland/riparian vegetation communities would include southern riparian forest, southern sycamore riparian woodland, southern willow scrub, mule fat scrub, riparian scrub, freshwater marsh, cismontane alkali marsh, southern coastal saltmarsh, coastal brackish marsh, and disturbed wetland.

An estimated 4.9 acres of sensitive upland vegetation communities would be impacted including Diegan coastal sage scrub, southern mixed chaparral, and non-native grassland. The impacts to these vegetation communities are considered significant.

Maintenance may also have significant impacts on wildlife due to the loss of urban pollutant removal capabilities associated with vegetated storm water facilities. Where conditions are favorable for vegetation to remove urban pollutants, the removal of that vegetation in the course of maintenance would eliminate this capability and potentially expose downstream wildlife to increased concentration of urban pollutants as well as increased sedimentation. This impact is considered potentially significant.

Mitigation Measures, Monitoring and Reporting

The City is proposing a comprehensive mitigation program for wetlands that involves a combination of enhancement, restoration, mitigation credit purchase, and/or creation. The mitigation would be primarily dependent on the type of habitat impacted. In addition to the mitigation measures identified in the following discussion, implementation of Mitigation Measures 4.8.1 through 4.8.3 would reduce water quality impacts related to maintenance to below a level of significance.

Wetland enhancement refers to the actions taken to increase the function of an existing wetland. Wetland enhancement involves removal of invasive species followed by reseeding and/or installation of container stock to facilitate the enhancement process.

Wetland restoration refers to actions taken to return wetland functions to an area that was previously a wetland but has since become an upland habitat. As with enhancement, restoration would include a combination of invasives removal followed by seeding and/or container stock installation.

Wetland creation refers to actions taken to create wetlands where none previously occurred. As with enhancement, creation would include a combination of invasives removal followed by seeding and/or container stock installation. In addition, grading may be required to create suitable hydrologic conditions.

Mitigation credit purchase would consist of purchasing wetland credits created in an approved mitigation bank. The responsibility of long-term maintenance would fall upon the party responsible for the mitigation bank.

Mitigation for impacts to upland vegetation would be accomplished through payments into the City's Habitat Acquisition Fund, purchasing mitigation credits, and/or through enhancement, restoration and/or creation at affected sites.

The overall approach proposed by the City for compensating for wetland and upland impacts is addressed below. This general discussion is followed by specific mitigation measures proposed to implement the approach described below.

Wetlands

Mitigation for the loss of wetland habitat would primarily be accomplished through enhancement and/or restoration of wetland habitat. The City may also choose to mitigate for wetland impacts

by creating new wetlands. However, habitat creation would not be required for three primary reasons. First, the drainage channel itself would remain after maintenance, and would continue to function for wildlife movement. Second, wetland vegetation has historically returned to these channels between maintenance events. Third, storm water facility maintenance, in most cases, occurs in urban channels where maintenance activities have occurred for many years in the past. The City may also choose to mitigate for wetland loss through acquisition of mitigation credits through an approved mitigation bank.

Uplands

Impacts to upland habitat would be mitigated through habitat preservation. Upland mitigation is traditionally accomplished by off-site acquisition of existing habitat. In order to encourage mitigation to occur within areas targeted for preserves, the City has established lower mitigation ratios for upland habitats acquired within preserve areas. Similarly, the mitigation ratios for impacts to habitat within a preserve area are higher in order to discourage impacts within these preserves. The City may also choose to mitigate upland impacts through the purchase of appropriate mitigation bank credits or make payments into the Habitat Acquisition Fund.

Implementation of the following mitigation measures, in conjunction with incorporation of the maintenance protocols specified in the Master Program, would reduce the potential impacts to biological resources to below a level of significance.

Procedural Mitigation Measures

Mitigation Measure 4.3.1: Prior to commencement of any activity within a specific annual maintenance program, a qualified biologist shall prepare an IBA for each area proposed to be maintained. The IBA shall be prepared in accordance with the specifications included in the Master Program.

Mitigation Measure 4.3.2: No maintenance activities within a proposed annual maintenance program shall be initiated before the City's Assistant Deputy Director (ADD) Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IBAs including proposed mitigation for each of the proposed activities. In their review, the ADD Environmental Designee and agencies shall confirm that the appropriate maintenance protocols have been incorporated into each IMP.

Mitigation Measure 4.3.3: No maintenance activities within a proposed annual maintenance program shall be initiated until the City's ADD Environmental Designee and Mitigation Monitoring Coordinator (MMC) have approved the qualifications for biologist(s) who shall be responsible for monitoring maintenance activities which may impact sensitive biological resources.

Mitigation Measure 4.3.4: Prior to undertaking any maintenance activity included in an annual maintenance program, a mitigation account shall be established to provide sufficient funds to implement all biological mitigation associated with the proposed maintenance activities. The fund amount shall be determined by the ADD Environmental Designee. The account shall be

managed by the City's SWD, with quarterly status reports submitted to DSD. The status reports shall separately identify upland and wetland account activity. Based upon the impacts identified in the IBAs, money shall be deposited into the account, as part of the project submittal, to ensure available funds for mitigation.

Mitigation Measure 4.3.5: Prior to commencing any activity that could impact wetlands, evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

Mitigation Measure 4.3.6: Prior to commencing any activity where the IBA indicates significant impacts to biological resources may occur, a pre-maintenance meeting shall be held on site with the following in attendance: City's SWD Maintenance Manager (MM), MMC, and Maintenance Contractor (MC). The biologist selected to monitor the activities shall be present. At this meeting, the monitoring biologist shall identify and discuss the maintenance protocols that apply to the maintenance activities.

At the pre-maintenance meeting, the monitoring biologist shall submit to the MMC and MC a copy of the maintenance plan (reduced to 11"x17") that identifies areas to be protected, fenced, and monitored. This data shall include all planned locations and design of noise attenuation walls or other devices. The monitoring biologist also shall submit a maintenance schedule to the MMC and MC indicating when and where monitoring is to begin and shall notify the MMC of the start date for monitoring.

Mitigation Measure 4.3.7: Within three months following the completion of mitigation monitoring, two copies of a written draft report summarizing the monitoring shall be prepared by the monitoring biologist and submitted to the MMC for approval. The draft monitoring report shall describe the results including any remedial measures that were required. Within 90 days of receiving comments from the MMC on the draft monitoring report, the biologist shall submit one copy of the final monitoring report to the MMC.

Mitigation Measure 4.3.8: Within six months of the end of an annual storm water facility maintenance program, the monitoring biologist shall complete an annual report which shall be distributed to the following agencies: the City of San Diego DSD, CDFG, RWQCB, USFWS, and Corps. At a minimum, the report shall contain the following information:

- Tabular summary of the biological resources impacted during maintenance and the mitigation;
- Master table containing the following information for each individual storm water facility or segment which is regularly maintained;
- Date and type of most recent maintenance;
- Description of mitigation which has occurred; and
- Description of the status of mitigation which has been implemented for past maintenance activities.

Wetland Mitigation

Mitigation Measure 4.3.9: Wetland impacts resulting from maintenance shall be mitigated in one of the following three ways: (1) habitat creation, restoration, and/or enhancement concurrent with maintenance, (2) habitat creation, restoration, and/or enhancement prior to maintenance, or (3) mitigation credits. When mitigation is proposed to be accomplished through concurrent creation, restoration or enhancement, the amount of planting shall be in accordance with ratios in Table 4.3-10. When previously created, restored or enhanced wetland habitat is proposed to be used for mitigation, the ratio shall be 1:1, provided the habitat has been determined to be successfully established by the ADD Environmental Designee in consultation with the Resource Agencies prior to commencing the maintenance activity. Mitigation credits may be used at a ratio of 1:1, provided the mitigation credits are from a mitigation bank which has been approved by the Resource Agencies. No maintenance shall commence until the ADD Environmental Designee has determined that mitigation proposed for a specific maintenance activity meets one of these three options.

Table 4.3-10 WETLAND MITIGATION RATIOS	
WETLAND TYPE	MITIGATION RATIO¹
Southern riparian forest	3:1
Southern sycamore riparian woodland	3:1
Riparian woodland	3:1
Coastal saltmarsh	4:1
Coastal brackish marsh	4:1
Southern willow scrub	2:1
Mule fat scrub	2:1
Riparian scrub	2:1
Freshwater marsh	1:1
Cismontane alkali marsh	4:1
Disturbed wetland	1:1
Streambed/natural flood channel	NA

¹Mitigation done in advance or through purchase of mitigation credits would be at a 1:1 ratio.

Mitigation locations for wetland impacts shall be selected using the following order of preference, based on the best mitigation value to be achieved.

1. Within impacted watershed, within City limits.
2. Within impacted watershed, outside City limits on City-owned or other publicly-owned land.
3. Outside impacted watershed, within City limits.

4. Outside impacted watershed, outside City limits on City-owned or other publically-owned land.

In order to mitigate for impacts in an area outside the limits of the watershed within which the impacts occur, the SWD must demonstrate to the satisfaction of the ADD Environmental Designee in consultation with the Resource Agencies that no suitable location exists within the impacted watershed.

Mitigation Measure 4.3.10: Whenever maintenance will impact wetland vegetation, a wetland mitigation plan shall be prepared in accordance with the Conceptual Wetland Restoration Plan contained in Appendix H of the Biological Technical Report, included as Appendix D.3 of the PEIR.

Mitigation which involves habitat enhancement, restoration or creation shall include a wetland mitigation plan containing the following information:

- Conceptual planting plan including planting zones, grading, and irrigation;
- Seed mix/planting palette;
- Planting specifications;
- Monitoring program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation which involves habitat acquisition and preservation shall include the following:

- Location of proposed acquisition;
- Description of the biological resources to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the mitigation area would be adequately preserved and maintained in perpetuity.

Mitigation which involves the use of mitigation credits shall include the following:

- Location of the mitigation bank;
- Description of the credits to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the credits are associated with a mitigation bank which has been approved by the appropriate Resource Agencies.

Upland Mitigation Measures

Mitigation Measure 4.3.11: Upland impacts shall be mitigated through payment into the City's Habitat Acquisition Fund, acquisition and preservation of specific land, or purchase of mitigation credits in accordance with the ratios identified in Table 4.3-11. Upland mitigation shall be completed within six months of the date the related maintenance has been completed.

Vegetation Type	Tier	Location of Impact with Respect to the MHPA	
		Inside	Outside
Coast live oak woodland	I	2:1	1:1
Scrub oak chaparral	I	2:1	1:1
Southern foredunes	I	2:1	1:1
Beach	I	2:1	1:1
Diegan coastal sage scrub	II	1:1	1:1
Coastal sage-chaparral scrub	II	1:1	1:1
Broom baccharis scrub	II	1:1	1:1
Southern mixed chaparral	IIA	1:1	0.5:1
Non-native grassland	IIIB	1:1	0.5:1
Eucalyptus woodland	IV	--	--
Non-native vegetation/ornamental	IV	--	--
Disturbed habitat/ruderal	IV	--	--
Developed	IV	--	--

¹Assumes mitigation occurs within an MHPA

Sensitive Species

Mitigation Measure 4.3.12: Loss of habitat for the coastal California gnatcatcher shall be mitigated through the acquisition of suitable habitat or mitigation credits at a ratio of 1:1. Mitigation shall take place within the MHPA, and shall be accomplished within six months of the date maintenance is completed.

Mitigation Measure 4.3.13: Prior to commencing any maintenance activity which may impact sensitive biological resources, the monitoring biologist shall verify that the following actions have been taken, as appropriate:

- Fencing, flagging, signage, or other means to protect sensitive resources to remain after maintenance have been implemented;
- Noise attenuation measures needed to protect sensitive wildlife are in place and effective; and/or
- Nesting raptors have been identified and necessary maintenance setbacks have been established if maintenance is to occur between January 15 and August 31.

The designated biological monitor shall be present throughout the first full day of maintenance, whenever mandated by the associated IBA. Thereafter, through the duration of the maintenance activity, the monitoring biologist shall visit the site weekly to confirm that measures required to protect sensitive resources (e.g., flagging, fencing, noise barriers) continue to be effective. The

monitoring biologist shall document monitoring events via a Consultant Site Visit Record. This record shall be sent to the MM each month. The MM will forward copies to MMC.

Offsite Mitigation

Mitigation Measure 4.3.14: Whenever offsite mitigation would result in a physical disturbance to the proposed mitigation area, the City will conduct an environmental review of the proposed mitigation plan in accordance with CEQA. If the offsite mitigation would have a significant impact on biological resources associated with the mitigation site, mitigation measures will be identified and implemented in accordance with the MMRP resulting from that CEQA analysis.

Impact

Issue 2: Would the Project reduce the level of diversity or numbers of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?

Direct Impacts

Sensitive Plant Species

Implementation of the proposed maintenance would directly impact four sensitive plant species observed within the study area: single-whorl burrobush, San Diego marsh-elder, southwestern spiny rush, and San Diego sunflower. These species are not: (1) federal- or state-listed as threatened or endangered, (2) City narrow endemic plant species, or (3) covered under the City's MSCP Subarea Plan. In the absence of information concerning the nature of the ultimate maintenance activities on specific storm water facilities, the potential impacts to sensitive plant species from future maintenance activities is considered potentially significant.

Several listed and/or narrow endemic plant species have the potential to occur within the Master Program study area. Listed and/or narrow endemic plant species with moderate potential or, low to moderate potential, to occur within or adjacent to the Master Program study area include the following: San Diego ambrosia, willowy monardella, Otay tarplant, snake cholla, variegated dudleya, San Diego thorn-mint, San Diego button-celery, California Orcutt grass, Otay Mesa mint, and spreading navarretia. San Diego ambrosia is known to occur within floodplain areas, and willowy monardella can be found in dry creek beds, and both have been reported in the vicinity of areas mapped for the Master Program. Snake cholla is primarily a sage scrub species, and has been reported in the vicinity of several storm water facilities in the Master Program study area. The remaining plants are primarily grassland or vernal pool species and were considered to have low to moderate potential to occur because of their known distributions in the Otay Mesa area where some channels within the Master Program are located, and where critical habitat for spreading navarretia occurs. Critical habitat for spreading navarretia would be expected to support other listed vernal pool plants such as San Diego thorn-mint, San Diego button-celery, California Orcutt grass, and Otay Mesa mint. As discussed earlier, the City has relinquished coverage and cannot rely on the City's Federal ITP to authorize an incidental take of San Diego thorn-mint, San Diego button-celery, or California Orcutt grass until an HCP has been approved. Although the Master Program would not impact vernal pools, vernal pools may occur

near certain areas in which maintenance is proposed. Any impacts to listed or narrow endemic plant species would be considered significant.

The potential for impacts to other listed plant species including coastal dunes milk vetch (*Astragalus tener* var. *titi*), Encinitas baccharis (*Baccharis vanessae*), short-leaved dudleya (*Dudleya brevifolia*), prostrate navarretia (*Navarretia prostrata*), San Diego mesa mint (*Pogogyne abramsii*), thread-leaved brodiaea (*Brodiaea filifolia*), Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), Orcutt's spineflower (*Chorizanthe orcuttiana*), saltmarsh bird's beak (*Cordylanthus maritimus*), Mexican flannelbush (*Fremontodendron mexicanum*), Orcutt's hazardia (*Hazardia orcuttii*), and small-leaved rose (*Rosa minutifolia*) are low, based on habitat affiliations combined with recent and previous surveys of the study area documented in the CNDDDB and cross-referenced with the areas of proposed impact. As a result, maintenance storm water facilities occurring as part of the Master Program would not be expected to have a significant impact on the sensitive plants listed above. As discussed earlier, the City has relinquished coverage and cannot rely on the City's Federal ITP to authorize an incidental take of San Diego thorn-mint and San Diego mesa mint until an HCP has been approved.

Sensitive Animal Species

Given the fact that maintenance would occur within channels where coastal sage scrub is limited and access and staging will occur in primarily disturbed areas, maintenance is not expected to have a direct impact on the coastal California gnatcatcher. However, these activities could result in impacts to nesting raptors such as the Cooper's hawk and northern harrier, as well as to other sensitive species. In the absence of information concerning the nature of the ultimate maintenance activities on specific storm water facilities, the potential impacts to sensitive animal species from future maintenance activities is considered potentially significant.

Maintenance activities within the channels have the potential to impact other sensitive species such as the yellow warbler, double-crested cormorant, and little blue heron. These impacts would not be considered significant due to the low sensitivity status of these species and measures to avoid disruption during the breeding season. No impacts are proposed to areas that are likely to be used by the federally- and state-listed endangered California brown pelican.

The potential for impacts to listed animal species including San Diego fairy shrimp, Quino checkerspot butterfly, Riverside fairy shrimp, arroyo toad, western snowy plover, California black rail, Belding's savannah sparrow, light-footed clapper rail, California least tern, and Pacific pocket mouse are low based on habitat affiliations combined with recent and previous surveys of the study area documented in the CNDDDB and cross-referenced with the areas of proposed impact. As a result, maintenance of storm water facilities occurring as part of the Master Program is not expected to have a significant impact on these sensitive animals. As discussed earlier, the City has relinquished coverage and cannot rely on the City's Federal ITP to authorize an incidental take of San Diego fairy shrimp and Riverside fairy shrimp until an HCP has been approved.

Although appropriate habitat for the arroyo toad occurs within the Master Program study area, this species is considered to have low potential to occur because there are no recorded CNDDDB

locations for this species in the study area and the list of known arroyo toad locations provided in the MSCP does not include creeks within the Master Program study area.

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) and southwestern willow flycatcher (*Empidonax traillii extimus*) have low to moderate potential to occur in areas of the Master Program that support mature riparian woodland. Within the Master Program, the most probable locations for these two species to occur are along the San Diego River and Soledad Creek. Any impacts to these species would be considered significant.

Implementation of the proposed project is expected to impact the habitat of the federally- and state-listed endangered least Bell's vireo, which has been documented in CNDDDB as occurring in various locations within or near the study area. Any impacts to this species would be significant.

The remaining sensitive animal species with the potential to occur are not federally or state-listed. Of these, the following have high potential to occur within the study area: saltmarsh skipper, orange-throated whiptail, San Diego horned lizard, two-striped garter snake, yellow-breasted chat and Mexican long-tongued bat. Other sensitive species not specifically addressed in this section have low or moderate likelihood of occurring on site.

Implementation of the proposed project is expected to significantly impact the habitat of yellow-breasted chat, which shares the same habitat requirements as the least Bell's vireo.

Any impacts to the remaining non-listed sensitive animal species would be adverse but less than significant because these species are not highly sensitive, and their habitat would not be permanently lost due to the frequency and nature of the maintenance clearing.

Indirect Impacts

Indirect impacts resulting from maintenance activities are primarily related to noise. Equipment noise has the potential to disrupt reproductive and feeding activities, communication, and sleep patterns of sensitive avian species. Refer to Subchapter 4.1, Land Use, for further discussion of the potentially significant noise impacts. Disruption of breeding activities of sensitive birds would constitute a significant indirect impact.

Significance of Impacts

Maintenance activities during the nesting/breeding of sensitive birds including the least Bell's vireo or raptors would have direct and indirect impact on these species resulting from direct mortality, loss of habitat and/or disruption of breeding/nesting activities. Thus, impacts to sensitive animals are considered potentially significant.

Although sensitive plants observed during survey work did not possess particularly high sensitivity classifications or sufficient population numbers to be considered significant, the potential exists for other plants to occur in the maintenance areas that could be significantly impacted by those activities. Thus, impacts to sensitive plants are considered potentially significant.

Mitigation Measures, Monitoring and Reporting

Implementation of Mitigation Measures 4.1-1 through 4.1-8, related to MSCP consistency, in combination with the following measures, would reduce the potential direct and indirect impacts to sensitive species to below a level of significance.

Mitigation Measure 4.3.15: Impacts to listed or endemic sensitive plant species shall be offset through implementation of one or a combination of the following actions:

- Impacted plants would be salvaged and relocated;
- Seeds from impacted plants would be collected for use at an off-site location;
- Off-site habitat that supports the species impacted shall be enhanced and/or supplemented with seed collected onsite; and/or
- Comparable habitat at an off-site location shall be preserved.

Mitigation which involves relocation, enhancement or transplanting sensitive plants shall include the following:

- Conceptual planting plan including grading and, if appropriate, temporary irrigation;
- Planting specifications;
- Monitoring Program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation Measure 4.3.16: Maintenance activities shall not occur within the following areas:

- 300 feet from any nesting site of Cooper's hawk (*Accipiter cooperii*);
- 1,500 feet from known locations of the southern pond turtle (*Clemmys marmorata pallida*);
- 900 feet from any nesting sites of northern harriers (*Circus cyaneus*);
- 4,000 feet from any nesting sites of golden eagles (*Aquila chrysaetos*); or
- 300 feet from any occupied burrow or burrowing owls (*Athene cunicularia*).

Mitigation Measure 4.3.17: If evidence indicates the potential is high for a listed species to be present, based on historical records or site conditions, then clearing, grubbing, or grading (inside and outside the MHPA) shall be restricted during the breeding season where development may impact the following species:

- Western snowy plover (between March 1 and September 15);
- Least tern (between April 1 and September 15);
- Cactus wren (between February 15 and August 15); or
- Tricolored black bird (between March 1 and August 1).

When other sensitive species, including, but not limited to, the arroyo toad, burrowing owl, or Quino checkerspot butterfly are known or suspected to be present all appropriate protocol surveys and mitigation measures shall be implemented.

Mitigation Measure 4.3.18: If a subject species is not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the ADD Environmental Designee and an applicable resource agency which demonstrates whether or not mitigation measures such as noise walls are necessary between the dates stated above for each species. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

Mitigation Measure 4.3.19: If the SWD chooses not to do the required surveys, then it shall be assumed that the appropriate avian species are present and all necessary protection and mitigation measures shall be required as described in Mitigation Measure 4.3.21

Mitigation Measure 4.3.20: If no surveys are completed and no sound attenuation devices are installed, it will be assumed that the habitat in question is occupied by the appropriate species and that maintenance activities would generate more than 60dB(A) L_{eq} within the habitat requiring protection. All such activities adjacent to the protected habitat shall cease for the duration of the breeding season of the appropriate species and a qualified biologist shall establish a limit of work.

Mitigation Measure 4.3.21: If maintenance occurs during the raptor breeding season (January 15 to August 31), a pre-maintenance survey for active raptor nests shall be conducted in areas supporting suitable habitat. If active raptor nests are found, maintenance shall not occur within 300 feet of a Cooper's hawk nest, 900 feet of a northern harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest.

Mitigation Measure 4.3.22: If removal of any eucalyptus trees or other trees used by raptors for nesting within a maintenance area is proposed during the raptor breeding season (January 15 through August 31), a qualified biologist shall ensure that no raptors are nesting in such trees. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 300 feet of any nesting site of Cooper's hawk or other nesting raptor until the young fledge. Should the biologist determine that raptors are nesting, the trees shall not be removed until after the breeding season. In addition, if removal of grassland or other habitat appropriate for nesting by northern harriers, a qualified biologist shall ensure that no harriers are nesting in such areas. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 900 feet of any nesting site of northern harrier until the young fledge.

Mitigation Measure 4.3.23: If maintenance activities would occur at known localities for listed fish species or within suitable habitat for other highly sensitive aquatic species (i.e., southwestern pond turtle), avoidance or minimization measures (i.e., exclusionary fencing, dewatering of the activity area, live-trapping, and translocation to suitable habitat) must be implemented.

Mitigation Measure 4.3.24: If maintenance activities will occur within areas supporting listed and/or narrow endemic plants, the boundaries of the plant populations designated sensitive by the resource agencies will be clearly delineated with flagging or temporary fencing that must remain in place for the duration of the activity.

Mitigation Measure 4.3.25: In order to avoid impacts to nesting avian species, including those species not covered by the MSCP, maintenance within or adjacent to avian nesting habitat shall occur outside of the avian breeding season (January 15 to August 31) unless postponing maintenance would result in a threat to human life or property.

Impact

Issue 3: Would the Project interfere with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors?

Significant long-term impacts to wildlife corridors are not anticipated to occur from proposed maintenance activities. Many of the storm water facilities included in the Master Program consist of concrete-lined channels, often surrounded by chain-link fencing, and traversing highly urban areas with no adjacent habitat. Access to these channels for most wildlife is extremely limited due to fencing and surrounding roads and other development, and such channels provide only limited habitat. No significant impacts to wildlife movement or corridors are anticipated to occur in these areas.

In contrast, some of the storm water facilities are within the City's MHPA and may be used as local wildlife movement corridors. In these locations, the MHPA is not limited to just the channels, but also incorporates wider swaths of adjacent habitat. Maintenance activities in these areas could temporarily disrupt animal movement during vegetation/sediment removal activities, but are not expected to have a significant impact over the long term since such facilities are part of wider linkages and the maintenance activities would be restricted to a relatively small component of these areas. In addition, vegetation would not be cleared from the slopes of channels that are wider than 20 feet from bank to bank, thus leaving vegetative cover intact for portions of the channel. Maintenance would only occur periodically, allowing time for some vegetative cover to reestablish between maintenance events. Furthermore, periodic removal of vegetation and debris from the channel bottom may even aid in wildlife passage in areas where the channel is otherwise choked with vegetation and debris prior to maintenance and vegetation remaining on the slopes provides cover.

Although the temporary loss of cover in portions of the storm water facilities could temporarily change how wildlife move through certain areas, the overall wildlife linkages would not be significantly impacted by implementation of the Master Program, as these linkages are part of broader areas of habitat suitable for wildlife movement.

Significance of Impacts

No significant impacts to wildlife corridors or movement would occur from the proposed maintenance activities.

Mitigation Measures, Monitoring and Reporting

No mitigation measures are required.

Impact

Issue 4: Would the Project conflict with the provisions of the ESL, MSCP or other approved local, regional or state habitat conservation plan?

As discussed in Subchapter 4.1, Land Use, maintenance activities would be consistent with relevant policies and guidelines of the City's MSCP.

Significance of Impacts

As the proposed maintenance activities would conform to the Master Program and previously outlined Mitigation Measures 4.1-1 through 4.1-8 and 4.3-1 through 4.3-25, the project would not conflict with the policies and guidelines of the MSCP, and no significant impacts would occur.

Mitigation Measures, Monitoring and Reporting

No mitigation measures are required.

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4.4 HISTORICAL RESOURCES

The following discussion is based on an archaeological resources analysis completed for the proposed project (Affinis 2011). A copy of the study is included as Appendix E. For the purposes of this discussion, “historical resources” refers to both historic and prehistoric resources.

4.4.1 Existing Conditions

Prehistory

The San Diego region has a diverse historical background. The earliest known human occupation was about 10,000 years ago within the San Dieguito complex. The finds within this complex consisted primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. Sleeping circles, trail shrines, and rock alignments also have been associated with early San Dieguito sites.

The San Dieguito complex is followed by the La Jolla complex at least 7,000 years ago, possibly as long as 9,000 years ago. The sites of this complex typically included millingstone assemblages in shell middens, crude cobble tools (choppers and scrapers), basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials.

The Late Prehistoric period is represented by the San Luis Rey complex (Shoshonean predecessors of the ethnohistoric Luiseño) in northern San Diego County and the Cuyamaca complex (Yuman forebears of the Kumeyaay) in the southern portion of the County. Elements of the San Luis Rey complex include small, pressure-flaked projectile points (Cottonwood and Desert Side-notched series); milling implements, including mortars and pestles; Olivella shell beads; ceramic vessels; pictographs and ungathered cremations. The Cuyamaca complex is similar to the San Luis Rey complex, differing in the following points: defined cemeteries away from living areas; use of grave markers; cremations placed in urns; use of specially made mortuary offerings; historic preference for side-notched points; higher numbers of scrapers, scraper planes, etc.; emphasis placed on use of ceramics; wide range of forms and several specialized items; steatite industry; substantially higher frequency of milling stone elements compared with San Luis Rey; and clay-lined hearths. Both the San Luis Rey and Cuyamaca complexes were defined on the basis of village sites in the foothills and mountains.

History

There are three historic periods in San Diego history. The historic periods refer to the time after Spanish colonization and include the study of non-indigenous cultures. While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. The Spanish Period was from 1769 to 1820, the Mexican Period was from 1820 to 1846, and the American Period was from 1846 to the present.

In 1769, the Royal Presidio and the first Mission San Diego were founded on a hill overlooking Mission Valley. The Mission San Diego de Alcala was constructed in its current location five years later. The Spanish Colonial period lasted until 1820 and was characterized by religious and

military institutions bringing Spanish culture to the area and attempting to convert the Native American population to Christianity. Mission San Diego was the first mission founded in Southern California. Mission San Luis Rey in Oceanside was founded in 1798.

The Mexican period lasted from 1820 to 1846. Following secularization of the missions in 1834, mission lands were given as large land grants to Mexican citizens as rewards for service to the Mexican government. The society made a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos.

The American period began in 1846, just before California became a state and Metropolitan San Diego began to develop in 1850. While the 1880s were a period of alternating boom and bust, by the 1890s, the City entered a time of steady growth. Subdivisions such as Golden Hill, Sherman Heights, Logan Heights, Banker's Hill, and University Heights began in the 1890s. As the City continued to grow in the early 20th century, the downtown's residential character changed. Streetcars and the introduction of the automobile allowed people to live farther from their downtown jobs. New suburbs were developed in Hillcrest, North Park, Mission Hills, and Normal Heights, as well as Point Loma, Ocean Beach, Pacific Beach, and Mission Beach. In the post-World War II years, San Diego grew significantly, with new jobs created in the aircraft industry, shipbuilding, fishing, and other enterprises.

Study Methods

A "constraints level" analysis was completed for this environmental analysis evaluation of impacts to historical resources, including archaeological resources and historic structures. The constraints level study is based on records searches conducted at the South Coastal Information Center (SCIC), vegetation mapping completed for the project and aerial photograph review.

Sites were plotted on USGS topographic maps, and data relating to site type, dates of original site recording and latest site updates, and site significance were recorded for each site within the study Area of Potential Effects (APE).

Based on the survey coverage maps, an attempt was made to estimate the percentage of each channel segment that had been surveyed for historical resources, in order to aid in assessing the potential for historical resources. Other factors evaluated in order to assess the potential for historical resources within a segment were topographic features, such as the steepness of slopes, the degree of past disturbance, and the potential for buried historical resources, due to alluvium or other factors. In some cases, the drainage channel itself is quite disturbed (or concrete-lined), but the surrounding area has a potential for historical resources, which could be subject to impacts from drainage maintenance or access.

No field work was undertaken for the current project, so there may be sites that were previously recorded which no longer exist. Conversely, there may be undocumented sites within the study APE. The historical resources were characterized with the following terms.

Habitation Sites

Prehistoric habitation sites were occupied seasonally or on a semi-permanent basis in order to exploit seasonally available resources. Such sites contain a wide variety of artifact types indicating that a range of activities were carried out on site. The range of activities expected at habitation sites includes food preparation, milling, cooking, production of a wide range of tools, maintenance, ceramic production, leather working, basket weaving, and ritual activities. Subsurface midden or refuse deposits reflecting the length and intensity of occupation are expected at habitation sites.

Temporary Camps

A variety of artifact types are expected at temporary camps, reflecting the range of activities carried out on site. Activities carried out at temporary camps might include any of the activities carried out at habitation sites, but the range of activities is expected to be more restricted. Midden deposits at temporary camps are shallow or non-existent, reflecting the short-term nature of occupation.

Artifact Scatter

Artifact scatters are defined as a surface scatter of artifacts such as ceramics, flaked stone, and ground stone without a subsurface deposit. Some animal bone and/or shell also may be present. Artifact scatters may represent an extractive or special activity area, or a temporary stopping place.

Lithic Scatter

Lithic scatters are defined as low-density scatters of debitage, cores, and other flaked stone debris. They lack diagnostic artifacts that are specific to particular periods and functions.

Bedrock Milling

Bedrock milling is defined as milling features located on bedrock outcrops or large boulders. Such features include mortars, basin metates, and milling slicks. Mortars are deep, conical basins ground into the rock surface. They were used in conjunction with elongated pestles to crush and grind acorns. Basin metates are generally shallow bowl-shaped depressions ground into the rock surface. They were used with rounded, hand-sized manos or grinding stones to grind seeds, such as chia. Slicks are smooth areas of the rock surface which have developed a polish as a result of grinding. They were produced as a result of grinding seeds with a hand-held mano. A surface artifact scatter may be associated with the milling features. However, if the scatter is dense or if a subsurface component is identified, the bedrock milling is identified as part of a habitation site.

Quarry

A quarry site is defined as an area where lithic (stone) raw material was procured. Quarry sites are extractive sites to which work groups came with the express purpose of procuring stone suitable for tool production. As these sites were only briefly visited as needed, they do not generally contain material associated with habitation sites.

Shell Midden

Shell deposits may or may not be associated with other historic material. If the deposit is not associated with a complex assemblage, it may represent a locus where shellfish were processed. If the shell is associated with subsurface deposits reflecting a range of activities, such as milling and tool production, it is classified as a habitation camp or temporary camp.

Historic Sites

A number of site types have been identified. These include trash scatters, habitation sites, historic buildings, and structures.

Rock Art

Rock art includes petroglyphs, patterns etched into rock walls or boulders; and pictographs, patterns painted on rocks using a variety of pigments. Petroglyphs and pictographs tend to be associated with ceremonial or ritual uses and are generally considered culturally significant by the Native American community.

Records Search Results

The results of the records search and data evaluation were divided by HU, including the San Dieguito, Peñasquitos, San Diego, Pueblo San Diego, Sweetwater, Tijuana, and Otay. Results of the records search are detailed below and in Table 4.4-1.

San Dieguito Hydrologic Unit

Three sites are recorded within the study APE in the San Dieguito HU (Table 4.4-1). The significance of these sites is not noted on the site records, but the pictographs and petroglyphs recorded within CA-SDI-7 are generally of historic importance to the Native American community and are therefore a significant historical resource. CA-SDI-7 is not recorded within the channel segment, but it is mapped within 300 feet of the segment. Because the site records for CA-SDI-7 and CA-SDI-581 have not been updated since their original recording in the late 1950s, it is not known if these sites still exist.

Peñasquitos Hydrologic Unit

Twenty sites have been recorded within 300 feet of the channel segments and basins in the Peñasquitos HU, which includes many areas considered rich in archeological resources (Table 4.4-1). The recorded sites include five lithic scatters and three artifact scatters that are not significant resources. Two sites were described as temporary camps, and another was called a temporary camp or habitation site. Four sites were described as habitations, including portions of the ethnohistoric villages of Ystagua (Sorrento Valley) and Rinconada. Another portion of Ystagua was described as a shell midden. Three sites, one called a lithic scatter and the others not described, apparently have been destroyed by Sorrento Valley Road and decades of development, but there may be subsurface remnants, as the sites are in alluvial settings. The historic site was described as an adobe structure, with prehistoric artifacts and marine shell remnants within the adobe bricks.

**Table 4.4-1
 KNOWN HISTORICAL RESOURCES**

Site Number	Site Type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
SAN DIEGUITO HU						
CA-SDI-7	Rock art	Haenszel	1957	N/A	N/A	Undetermined
CA-SDI-581	Artifact scatter	True	n.d.	N/A	N/A	Undetermined
CA-SDI-11,023	Bedrock milling	Cardenas	1988	N/A	N/A	Undetermined
PEÑASQUITOS HU						
CA-SDI-1010	Lithic scatter	Kidder	1979	N/A	N/A	Destroyed?
CA-SDI-2723	Temporary camp	Rogers	n.d.	Pignuolo	2002	Undetermined
CA-SDI-4605	Habitation	Falk/Ball	1964	N/A	N/A	Undetermined
CA-SDI-4609	Habitation: part of Village of Ystagua	Krase	1972	N/A	N/A	Significant
CA-SDI-4618	Habitation	Hofmeister, Bull	n.d.	N/A	N/A	Undetermined
CA-SDI-4647	Not reported	Harding	1952	N/A	N/A	Destroyed?
CA-SDI-5017	Habitation: Village of Rinconada	Rogers	n.d.	Bissell	1992	Significant
CA-SDI-5204	Historic	McCoy	1977	Bull	1978	Undetermined
CA-SDI-5443	Shell midden: part of Village of Ystagua	Taylor	1977	N/A	N/A	Significant
CA-SDI-5605	Lithic scatter	Moriarty	1977	N/A	N/A	Undetermined
CA-SDI-5606	Lithic scatter	Moriarty	1977	N/A	N/A	Undetermined
CA-SDI-5608	Lithic scatter	Moriarty	1977	Gallegos, Phillips, Kyle	1995	Not significant
CA-SDI-5609	Lithic scatter	Moriarty	1977	Gallegos, Phillips, Kyle	1995	Not significant
CA-SDI-5826	Habitation or temporary camp	Fulmer	n.d.	N/A	N/A	Undetermined
CA-SDI-10,438	Shell and artifact scatter	Cheever	1985	N/A	N/A	Undetermined
CA-SDI-11,017	Artifact scatter	Smith	1982	N/A	N/A	Undetermined
CA-SDI-12,453	Artifact scatter	Huey, Bass	1991	N/A	N/A	Undetermined
CA-SDI-12,557	Temporary camp	Smith	1992	Bissell	1996	Undetermined
CA-SDI-12,558	Shell midden	Smith	1992	Iversen	2005	Not significant; destroyed?

**Table 4.4-1 (cont.)
 KNOWN HISTORICAL RESOURCES**

Site Number	Site Type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
CA-SDI-17,374	Temporary camp	Rogers	n.d.	N/A	N/A	Undetermined
PUEBLO SAN DIEGO HU						
CA-SDI-5580	Historic	Norwood	1978	KEA	1996	Undetermined
CA-SDI-10,252	Not cultural	Stein	1985	Gross, Robbins-Wade	1990	Not significant
CA-SDI-10,528	Historic	Wade	1986	Smith	2004	Significant
CA-SDI-11,165	Habitation	Reading	1978	Smith	1989	Undetermined
CA-SDI-11,721	Historic	Clevenger, Briggs	1990	N/A	N/A	Undetermined
CA-SDI-12,087	Not cultural	Gross	1990	Robbins-Wade, Gross	1998	Not significant
CA-SDI-12,090	Habitation and historic	Pigniolo, Briggs	1991	N/A	N/A	Undetermined
CA-SDI-12,091	Habitation	Pigniolo	1991	N/A	N/A	Undetermined
CA-SDI-14,162 P-37-014494	Lithic scatter	KEA	1996	N/A	N/A	Undetermined
CA-SDI-14,163 P-37-014495	Historic	KEA	1996	N/A	N/A	Undetermined
CA-SDI-14,164 P-37-014496	Historic	KEA	1996	N/A	N/A	Undetermined
CA-SDI-14,165 P-37-014497	Historic	KEA	1996	N/A	N/A	Undetermined
CA-SDI-14,599 016029	Habitation	Unknown	n.d.	Tift	1997	Destroyed
CA-SDI-17,099 P-37-025706	Shell midden	Hector, Zelenka	2004	N/A	N/A	Undetermined
CA-SDI-17,203 P-37-025853	Habitation	McGinnis	2004	Laguna Mountain	2006	Undetermined
CA-SDI-18,347 P-37-028330	Historic	Jones & Stokes	2005	N/A	N/A	Undetermined

**Table 4.4-1 (cont.)
 KNOWN HISTORICAL RESOURCES**

Site Number	Site Type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
PUEBLO SAN DIEGO HU (CONT.)						
P-37-014493	Historic	Pigniolo, Beck	1996	N/A	N/A	Undetermined
P-37-014998	Isolated core	Affinis	1990	N/A	N/A	Not significant
P-37-024259	Historic	Pierson	2001	N/A	N/A	Undetermined
P-37-024260	Historic	Pierson	2001	N/A	N/A	Undetermined
SAN DIEGO HU						
CA-SDI-35	Historic and habitation	Pilling	1949	Schaefer	1990	Significant
CA-SDI-44	Temporary camp	Nelson	n.d.	N/A	N/A	Undetermined
CA-SDI-47	Temporary camp	Nelson	n.d.	DeBarros	1996	Undetermined
CA-SDI-202	Historic and habitation	Treganza	n.d.	N/A	N/A	Significant
CA-SDI-11,767	Habitation	Rogers	n.d.	Huey, Baker	1992	Undetermined
CA-SDI-12,128	Shell midden	Huey and Baker	1992	N/A	N/A	Undetermined
CA-SDI-12,863	Historic	McKenna	1992	N/A	N/A	Destroyed
CA-SDI-13,708, P-37-019016	Habitation	Tift and Strudwick	1994	N/A	N/A	Unknown
CA-SDI-14,152, P-37-014380	Habitation. Part of village of Cosoy	Schaefer	1996	NA	NA	Significant
CA-SDI-16,288, P-37-024558	Shell midden	Harris	2002	Recon	2007	Undetermined
CA-SDI-16,290, P-37-024560	Shell midden	Harris	2002	NA	NA	Undetermined

**Table 4.4-1 (cont.)
 KNOWN HISTORICAL RESOURCES**

Site Number	Site Type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
TIJUANA HU						
CA-SDI-2611	Lithic scatter	Moriarty and Carter	1973	NA	NA	Undetermined
CA-SDI-7208	Lithic scatter	Ferguson	1979	Pierson	2002	Not significant
CA-SDI-10,669	Habitation	Shipek	1976	ACOE	1992	Undetermined
CA-SDI-11,096	Historic	Van Wormer	1989	Van Wormer, Coleman	1994	Destroyed
CA-SDI-17,505, P-37-026708	Historic	Pierson	2005	NA	NA	Not significant
CA-SDI-17,240, P-37-025924	Historic	Steely	2004	NA	NA	Significant
OTAY HU						
CA-SDI-13,072	Historic	Wade	1993	NA	NA	Not significant

Source: Affinis (2011)

Bold indicates that the resource is within or immediately adjacent to a channel

San Diego Hydrological Unit

Eleven archaeological sites have been recorded within the APE in the San Diego HU (Table 4.4-1), which includes the San Diego River from Mission Valley to the ocean, as well as portions of Alvarado Canyon, Murphy Canyon, and the Fairmount Avenue canyon. The historic site consists of the remains of foundations and the support system of the historic Mission Bay Bridge. Two sites are described as camps, apparently for shellfish processing, and three sites are shell middens. The five habitation sites include a large site in Mission Valley; deeply buried deposits that represent the ethnohistoric village of Cosoy, also in Mission Valley; a habitation site in the Fairmount Avenue canyon; two site numbers that have been assigned to the Mission San Diego de Alcalá, its associated buildings and archaeological deposits; and the ethnohistoric village of Nipaguay, located in the same area as the mission. Although much of this site area (including both CA-SDI-35 and CA-SDI-202) has been subject to a great deal of disturbance, overall the site is archaeologically significant and retains significance as a Native American historical heritage resource. The alluvial setting of Mission Valley is known to contain buried historic deposits.

Pueblo San Diego Hydrological Unit

Twenty historical resources have been recorded within 300 feet of channel segments in the Pueblo San Diego HU, including 10 historic sites, 4 Native American habitation sites, and 1 site that includes both (Table 4.4-1). Other resources include a lithic scatter, a shell midden, and an isolated artifact. Two sites were determined not to be historic (one shell scatter was in fill soils, and one site, noted as a Spanish Rancho, was found to be remnants of a building that post-dates 1950). One site consists of the historic police pistol range, and one site included remains of a structure, but for the most part the historic sites are trash deposits in canyons. The Pueblo San Diego HU includes the Chollas Creek and South Chollas Creek drainages with potential for buried historical resources, both historic and Native American.

Sweetwater Hydrological Unit

A single drainage segment is within the Sweetwater HU. No historical resources are recorded within the APE of this segment.

Tijuana Hydrological Unit

Six historical resources have been recorded within the APE in the Tijuana HU (Table 4.4-1). These include three historic sites, two lithic scatters, and a large buried site that appears to represent the ethnohistoric village of Millejo (CA-SDI-10,669). Although none of the site records for CA-SDI-10,669 address the site's significance, it appears to have the potential to contain archaeologically and culturally significant deposits. One of the lithic scatter sites, CA-SDI-7208, covers hundreds of acres on Otay Mesa. This site has been tested and determined not to be a significant resource except the portion of the site that has been recorded as CA-SDI-11,424 that is located outside the segment. One historic house has been destroyed, and no historic material was found there during monitoring. The second historic site consists of artifacts found in fill soils, and the third is a bridge on Hollister Avenue over the Tijuana River.

Otay Hydrological Unit

A single historical resource has been recorded within the APE in the Otay HU (Table 4.4-1). CA-SDI-13,072 was described as a 1930s homestead. The site was determined not to be a significant resource.

Potential for Presence of Historical Resources

Over twenty-five years of systematic historical resource survey, evaluation, and data recovery for CEQA mandated projects has resulted in a body of data relating to historical settlement and land use that can be used to construct predictive models of historic settlement. Presented below are some generalizations regarding the location and nature of historic sites within the study area, based on recorded site distributions, the Christenson 1990 study, the Clean Water Program for Greater San Diego study (Gross 1993a and b), and other studies (see Appendix E).

Land Use and Settlement Pattern

Based on studies within San Diego County, several land use and settlement patterns exist. Large habitation sites are usually located in valleys within 210 feet of a seasonal stream, with slopes no greater than 15 percent, generally in grassland areas. Small habitation sites and large resource processing sites were similarly situated, in flat areas of valleys, drainages, or ridges within 295 feet of seasonal streams within chaparral grasslands or southern oak woodlands. Small processing sites were mostly found in flat, grassy valley settings within 525 feet of seasonal streams and were often associated with granitic outcrops. Lithic scatters were found in a variety of locations, but over 50 percent were on flat ridges, terraces, or mesas within 558 feet of water. The average distance of all sites to water was 443 feet.

Hillside and slope locations were the most common landform on which sites occurred (26.6 percent), followed by valley bottom locations (22.7 percent) and hilltop/ridge locations (17.1 percent). Quaternary alluvium (common in valley bottoms) was the most common geologic setting, with the formations of the Poway and La Jolla groups (source of lithic raw material) coming in second.

Gross used statistical analyses to determine whether the patterns noted in landform, underlying geology, elevation, distance to water, and other variables were meaningful, the result of historic selection, or the result of random distribution (1993a and b). These analyses indicated that elevation, distance to water, and differential between site elevation and elevation of the nearest water source are all important considerations in site location. Valley bottom locations were favored, and steep slopes were avoided. Based on these data, one would expect to encounter archaeological sites in valley bottom and valley margin locations. Sites would be much less likely in steep-sided canyons. Lithic quarrying or processing sites may be found on steeper slopes, but these sites would generally not be as significant as habitations or camp sites.

Buried Site Potential

Buried sites hold a great source of research potential since they can reveal chronological data, as well as giving us a “snapshot” of sites that are readily interpretable as temporal and functional units. To determine areas that likely contain subsurface historical resources, various factors that lead to buried sites were examined. For the most part, human activities take place on the ground surface. Artifacts and features appear in a subsurface context through bioturbation or deposition. The depositional mechanisms of site burial include alluvium (flowing water); colluvium (gravity); eolian (wind-blown) sediments; and anthropogenic (human-caused) mechanisms, such as purposeful burial of materials, or cut and fill activities. Therefore, buried sites are often found near floodplains, mouths of streams, coastal valleys, bottoms of slopes, and within areas graded or leveled by man. Buried historical resources often become surface resources through earth-disturbing activities, including erosional gullies, road cuts, plowing, rodent activity, and grading and trenching.

Archaeological sites within the study APE that are known to have deeply buried deposits include the ethnohistoric villages of Ystagua, Rinconada, Millejo, Cosoy, and Nipaguay. In addition to these sites, buried historic material may be expected in such areas as Sorrento Valley/Soledad Canyon, Rose Creek, Mission Valley, Chollas Valley, and the Tijuana River Valley. Other drainages in the study area have some degree of alluvial or colluvial sediments as well, but buried sites have not yet been found in some areas, such as Alvarado Canyon. It is noted that many drainages in the study area do not offer wide drainage bottoms that would be preferred as a site setting.

Other Factors

Other factors also were taken into consideration to determine the potential presence of historical resources within the study area. These factors include previous survey coverage, channel conditions, and integrity of historical resources.

Channels and basins that were previously surveyed and found to contain no historical resources were considered to have a low potential for historical resources. Channels and basins that were not surveyed were considered to have a moderate to high historical resource potential, unless other factors pointed toward a low likelihood of resources (e.g., channel condition and the predictive modeling factors addressed above).

Generally, channels and basins that are concrete-lined or excavated were considered to have a low potential, while undisturbed channels were considered to have a moderate to high potential for historical resources. Again, factors such as degree of past disturbance and topography may alter the potential for historical resources even in natural channels. In some cases, the drainage channel itself is quite disturbed (or concrete-lined), but the surrounding area has a potential for historical resources, which could be subject to impacts from drainage maintenance or access.

The site integrity also was a factor. Urban areas developed prior to CEQA generally have a low potential for resources. This is due to the fact that prior to CEQA, development took place without

regard to the preservation of archaeological and historic sites and development has resulted in the destruction of a high proportion of historical resources.

Predictive Modeling

A predictive model that assigns levels of historical resource sensitivity (low, moderate or high) to each of the channels and basins was developed based on an assessment of the following factors: the existence of known historical resources; previous historical resources surveys conducted; the potential for buried deposits; topography/slope/size of the canyon, availability of land suitable for habitation, and availability of natural resources; and integrity of historical resources. The results of this predictive model are included in Table 4.4-2. It should be noted that the rankings provided are based on a qualitative assessment of factors, rather than a strictly quantitative analysis, and are provided for general information purposes only. A more detailed site-specific historical resource investigation would be completed as part of an IHA. In addition, all wetland mitigation areas shall be surveyed prior to approval of wetland mitigation plans. At that time, based on site-specific data, a more definitive determination would be made regarding the potential for resources to be impacted by maintenance.

Channel No.	Facility Description	Sensitivity
1	Rancho Bernardo Rd. & Bernardo Center Dr.	Low
2	Rancho Bernardo	Moderate
3	Rancho Bernardo	Moderate
4	11044 Via San Marco	Moderate
6	11689 Sorrento Valley Rd.	High
6a	3000 Industrial Court.	High
7	Soledad Creek	Moderate
7-8	Los Peñasquitos Channel	Moderate
9	11000 Roselle St./11100 Flinkote Ave.	Moderate
10	Dunhill St & Roselle St.	Moderate
11-12	Soledad Creek Channel	High
17	Soledad Creek Channel	High
18	Maya Linda & Via Pasar	Moderate
19	Candida & Via Pasar	Moderate
32	Rose Creek Channel	Low
33	Rose Creek Channel	Low
34	Rose Creek Channel	High
35	Rose Creek Channel	High
36	Mission Bay High School	Moderate
37	Pacific Beach Dr. & Olney St.	Moderate
40-42	Chateau Channel	Low

Channel No.	Facility Description	Sensitivity
47	7969 & 7971 Engineer Rd.	Low
49-50	Murphy Canyon Channel	Low
51	Red River Dr. & Conestoga Dr.	Low
52	Camino del Arroyo	Low
53	Cowles Mountain Channel	Low
54	San Carlos Channel	Low
55	West Morena Blvd.	High
55a	West Morena Blvd.	High
55-57	Tecolote Creek Channel	Moderate
58	Murphy Canyon Channel	Low
58a	Murphy Canyon Channel	Low
59-60	Alvarado Channel	Moderate
61-62	Alvarado Channel	Low
64	Alvarado Channel	Low
65 a-c	Fairmont Channel	Low
66	Montezuma Channel	Moderate
67	Auburn Creek Channel	High
68	Auburn Creek Channel	Moderate
69	Auburn Creek Channel	High
70	Auburn Creek Channel	Low
71-72	Chollas Creek Channel	Low
76-77	Auburn Creek Channel	High
78	Chollas Creek Channel	High
79	Chollas Creek Channel	Moderate
79a	Delevan Dr.	Moderate
80	Chollas Creek Channel	Low
81	Camino de la Reina & Camino del Arroyo	Moderate
82	Nimitz Channel	High
83	Famosa Blvd. & Valeta St.	Low
84	Washington Channel	Low
86	Pershing Channel	High
89	Chollas Creek Channel	Moderate
90	Imperial Ave. & Gillette St.	Moderate
91	Chollas Creek Channel	High
92	35th St. & Martin Ave.	High
93	Chollas Creek Channel	High
94-95	South Chollas Creek Channel	High

Channel No.	Facility Description	Sensitivity
97	South Chollas Creek Channel	High
97a	South Chollas Creek Channel	High
98-99	South Chollas Creek Channel	Moderate
100	42nd St. & J St.	Low
101	South Chollas Creek Channel	High
103-104	South Chollas Creek Channel	Moderate
105	Euclid Ave. & Castana St.	Moderate
106-107	Encanto Channel	Moderate
108-111	Encanto Channel	Low
113-115	Jamacha Channel	Low
117	Solola Channel	Moderate
118-119	Solola Channel	Moderate
120-121	Cottonwood Channel	Low
122	Parkside Channel	Low
123	Sanyo Channel	Low
124	La Media Rd. & Airway Rd.	Moderate
125	Camino Maquiladora & Cactus Rd.	Low
126	Siempre Viva Rd. & Bristow Ct.	Moderate
127	Britannia Blvd. & Bristow Ct.	Moderate
128	Virginia Channel	Moderate
129	Smythe Channel	Moderate
130	Smythe Channel	Moderate
131	Nestor Creek Channel	Moderate
132-133	Nestor Creek Channel	Moderate
134	Nestor Creek Channel	Moderate
136-137	Tocayo Channel	Low
138a-c	Tijuana River	High
138-139	Smugglers Gulch Channel	High
145-147	San Diego River	Moderate

4.4.2 Impacts

Significance Criteria

Generally, a resource shall be considered by the Lead Agency to be historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code 5024.1, 14 CCR Section 4852), including the following:

- A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- B. Is associated with the lives of persons important in our past;
- C. Embodies the distinctive characteristics of a type, period, region, or method of maintenance, or represents the work of an important creative individual, or possesses high artistic values; or,
- D. Has yielded or may be likely to yield information important in prehistory or history.

The California Register includes resources listed in or formally determined eligible for listing in the National Register of Historic Places, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory as potentially significant may be eligible for listing in the California Register and are presumed to be significant resources for purposes of CEQA, unless a preponderance of evidence indicates otherwise (Public Resource Code 5024.1, 14 CCR 4850).

The most recent amendments to the CEQA Guidelines direct that lead agencies should first evaluate an archaeological site to determine if it meets the criteria for listing in the California Register. If an archaeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered (Public Resource Code 21084.1 and 21083.2(l)). If an archaeological site is not an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment.

The City of San Diego Significance Determination Thresholds (2011) have established the following criteria to be used in the determination of significance under CEQA:

- An archaeological site must consist of at least three associated artifacts/ecofacts (within a 50-square meter area) or a single feature and must be at least 45 years of age. Archaeological sites containing only a surface component are generally considered not significant unless demonstrated otherwise. Such site types may include isolated finds, bedrock milling stations, sparse lithic scatters, and shellfish processing stations. All other archaeological sites are considered potentially significant. The determination of significance is based on a number of factors specific to a particular site including site size, type, and integrity; presence or absence of a subsurface deposit, soil stratigraphy, features, diagnostics, and dateable material; artifact and ecofact density; assemblage complexity; cultural affiliation; association with an important person or event; and ethnic importance.

- The determination of significance for historic buildings, structures, objects, and landscapes is based on age, location, context, association with an important person or event, uniqueness, and integrity.
- A site will be considered to possess ethnic significance if it is associated with a burial or cemetery; religious social or traditional activities of a discrete ethnic population; an important person or event as defined by a discrete ethnic population; or the mythology of a discrete ethnic population.

Projects that have a federal nexus (e.g., permits or funding from a federal agency) require compliance with federal regulations. The National Historic Preservation Act (NHPA) and the regulations that implement Section 106 of the Act (36 CFR 800) require federal agencies to consider the effects of their actions on properties listed, or eligible for listing in the National Register of Historic Places. Eligible resources are considered historic properties. The criteria for listing a property on the California Register of Historical Resources were modeled after on those for the National Register of Historic Places, so the significance criteria are quite similar under both sets of regulations.

Section 60.6 of 36 CFR Part 60 presents the criteria for evaluation of cultural resources for nomination to the National Register of Historic Places as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, and association, and

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period or method or maintenance, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history.

Analysis of Impacts

Issue 1: To what extent would Project impact historical resources?

Issue 2: To what extent would Project impact resources associated with Native American values?

As detailed under the existing conditions, a number of known historical resources within the study area (Table 4.4-1) have been determined to be significant under CEQA and City of San Diego

guidelines. In addition, the predictive model indicates there is a potential for significant historical resources within several areas of the APE (Table 4.4-2). It is important to note that the probability assessments of historical resources being found within the channels and basins, presented in Table 4.4-2, are based on very general assumptions and are intended to only provide a plan level of analysis.

The proposed project would significantly impact historical resources through ground-disturbing activities associated with the proposed access/staging and maintenance. It is noted that the potential for impacting significant historical resources is considered lower within the channels and basins themselves since all the basins have been excavated, and many of the channels have been lined with concrete or created through excavation. Nonetheless, the impacts to areas that contain historical resources or with a high or moderate potential to contain historical resources would be considered potentially significant. Impacts to historical resources could also significantly impact Native American values if the resources are determined to have significant value to affiliated Native Americans.

As described in the discussion of mitigation measures below, each project included within the proposed project would undergo a project-specific assessment, referred to as an IHA, to determine the presence and potential impact on archaeological and historical resources at the time maintenance is proposed. At that time, based on more precise data, a more accurate assessment would be made regarding the presence or absence of such resources.

Significance of Impact

Significant impacts to historical resources and Native American values may occur as a result of the proposed project. The proposed project includes access and staging, and maintenance of drainages and channels within areas that have a high potential for historical resources or previously identified historical resources.

Mitigation Measures, Monitoring and Reporting

The following measures shall be implemented prior to the first time maintenance occurs within a drainage facility pursuant to the Master Program. Once a maintenance area has been surveyed, significance has been determined, and mitigation measures undertaken to protect (e.g., fencing or soil capping) and/or mitigate (e.g., data recovery) any affected historical resource, in accordance with the City's HRG, no further historical resource investigation shall be required. Implementation of these measures would reduce impacts to historical resources and Native American values to below a level of significance.

Mitigation Measure 4.4.1: Prior to commencement of the first occurrence of maintenance activity within a drainage facility included in the Master Program, an archaeologist, meeting the qualifications specified by the City's HRG, shall determine the potential for significant historical resources to occur in the maintenance area. If the archaeologist determines that the potential is moderate to high, an IHA shall be prepared. Based on the IMP for the proposed maintenance activity, the archaeologist shall determine the APE, which shall include access, staging, and maintenance areas. The IHA shall include a field survey of the APE with a Native American

monitor, using the standards of the City's HRG. In addition, the archaeologist shall request a record search from the SCIC. Based on the results of the field survey and record search, the archaeologist shall conduct an archaeological testing program for any identified historical resources, using the standards of the City's HRG. If significant historical resources are identified, they shall be taken to the Historical Resources Board for designation as Historic Sites. Avoidance or implementation of an Archaeological Data Recovery Program (ADRP) and Archaeological Monitoring Program shall be required to mitigate project impacts to significant historical resources. The archaeologist shall prepare a report in accordance with City guidelines. At a minimum, the IHA report shall include:

- Description of maintenance to be performed, including length, width, and depth;
- Prehistory and History Background Discussion;
- Results of Record Search;
- Survey Methods;
- Archaeological Testing Methods;
- Impact Analysis; and
- Mitigation Recommendations, including avoidance or implementation of an ADRP and archaeological monitoring program.

In the event that the IHA indicates that no significant historical resources occur within the APE, or have the potential to occur within the APE, no further action shall be required.

Mitigation Measure 4.4.2: Prior to initiating any maintenance activity where the IHA identifies existing significant historical resources within the APE, the following actions shall be taken.

4.4.2.1 The Storm Water Department shall select a Principal Investigator (PI), who shall be approved by the ADD Environmental Designee. The PI must meet the requirements of the City's HRG.

4.4.2.2 Mitigation recommendations from the IHA shall be incorporated into the IMP to the satisfaction of the PI and the ADD Environmental Designee. Typical mitigation measures shall include but not be limited to: delineating resource boundaries on maintenance plans; implementing protective measures such as fencing, signage or capping; and selective monitoring during maintenance activities.

4.4.2.3 If impacts to significant historical resources cannot be avoided, the PI shall prepare an Archaeological Research Design and Data Recovery Program (ARDDRP) for the affected resources, with input from a Native American consultant, and the ARDDRP shall be approved by the ADD Environmental Designee. Based on the approved research design, a phased excavation program shall be conducted, which will include the participation of a Native American. The sample size to be excavated shall be determined by the PI, in consultation with City staff. The sample size shall vary with the nature and size of the archaeological site, but need not exceed 15 percent of the overall resource area. The area involved in the ARDDRP shall be surveyed, staked and flagged by the archaeological monitor, prior to commencing maintenance activities which could affect the identified resources.

4.4.2.4 A pre-maintenance meeting shall be held on-site prior to commencing any maintenance that may impact a significant historical resource. The meeting shall include representatives from the PI, the Native American consultant, Storm Water Department, Mitigation Monitoring Coordinator (MMC), Resident Engineer (RE), and Maintenance Contractor (MC). The PI shall explain mitigation measures which must be implemented during maintenance. The PI shall also confirm that all protective measures (e.g. fencing, signage or capping) are in place.

4.4.2.5 If human remains are discovered in the course of conducting the ARDDRP, work shall be halted in that area and the following procedures set forth in the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) will be taken:

- The PI shall notify the RE, and the MMC. The MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS).
- The PI shall notify the Medical Examiner, after consultation with the RE, either in person or via telephone.
- Work will be redirected away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner, in consultation with the PI, concerning the provenience of the remains.
- The Medical Examiner, in consultation with the PI, shall determine the need for a field examination to determine the provenience.
- If a field examination is not warranted, the Medical Examiner shall determine, with input from the PI, if the remains are or are most likely to be of Native American origin.
- If Human Remains are determined to be Native American, the Medical Examiner shall notify the Native American Heritage Commission (NAHC). The NAHC shall contact the PI within 24 hours after the Medical Examiner has completed coordination. The NAHC will identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information. The PI will coordinate with the MLD for additional coordination. If (1) the NAHC is unable to identify the MLD, or the MLD fails to make a recommendation within 24 hours after being notified by the Commission; or (2) the landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, then the landowner or their authorized representative shall re-enter the human remains and all associated grave goods with appropriate dignity, on the property in a location not subject to subsurface disturbance. Information on this process will be provided to the NAHC.
- If Human Remains are not Native American, the PI shall contact the Medical Examiner and notify them of the historic era context of the burial. The Medical Examiner shall

determine the appropriate course of action with the PI and City staff (PRC 5097.98). If the remains are of historic origin, they shall be appropriately removed and conveyed to the Museum of Man for analysis. The decision for reinterment of the human remains shall be made in consultation with MMC, EAS, the landowner, and the Museum.

4.4.2.6 The PI shall be responsible for ensuring: (1) that all cultural materials collected are cleaned, catalogued and permanently curated with an appropriate institution; (2) that a letter of acceptance from the curation institution has been submitted to MMC; (3) that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; (4) that faunal material is identified as to species; and (5) that specialty studies are completed, as appropriate. Curation of artifacts associated with the survey, testing and/or data recovery for this project shall be completed in consultation with LDR and the Native American representative, as applicable.

4.4.2.7 The Archaeologist shall be responsible for updating the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B associated with the ARDDRP in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the SCIC with the Final Results Report.

4.4.2.8 The PI shall prepare a Draft Results Report (even if negative) that describes the results, analysis and conclusions of the ARDDRP (with appropriate graphics). The MMC shall return the Draft Results Report to the PI for revision or for preparation of the Final Report. The PI shall submit the revised Draft Results Report to MMC for approval. The MMC shall provide written verification to the PI of the approved report. The MMC shall notify the RE of receipt of all Draft Result Report submittals and approvals. The MMC shall notify the RE of receipt of the Final Results Report.

Mitigation Measure 4.4.3: Prior to initiating any maintenance activity where the IHA identifies a moderate to high potential for the occurrence of significant historical resources within the APE, the following actions shall be taken:

4.4.3.1 Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable maintenance documents through the plan check process.

B. Letters of Qualification have been submitted to ADD

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with

- certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
 3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

4.4.3.2 Prior to Start of Maintenance

- A. Verification of Records Search
 1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
 2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
 3. The PI may submit a detailed letter to MMC requesting a reduction to the 1/4 mile radius.
- B. PI Shall Attend Pre-maintenance Meetings
 1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Pre-maintenance Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Maintenance Manager (MM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Pre-maintenance Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Maintenance Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Pre-maintenance Meeting, the Applicant shall schedule a focused Pre-maintenance Meeting with MMC, the PI, RE, MM or BI, if appropriate, prior to the start of any work that requires monitoring.
 2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
 3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate maintenance documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
 - b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and

associated appurtenances and/or any known soil conditions (native or formation).

- c. MMC shall notify the PI that the AME has been approved.
4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a maintenance schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during maintenance requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final maintenance documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Maintenance Schedule

After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Maintenance Schedule from the MM.

4.4.3.3 During Maintenance

- A. Monitor Shall be Present During Grading/Excavation/Trenching
 1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. **The Maintenance Manager is responsible for notifying the RE, PI, and MMC of changes to any maintenance activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.**
 2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Sections 4.4.3.3.B-C and 4.4.3.4-A-D shall commence.
 3. The PI may submit a detailed letter to MMC during maintenance requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
 4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be faxed by the MM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.
- B. Discovery Notification Process
 1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in

the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.

2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section 4.4.3.4 below.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
 - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, MM and RE. ADRP and any mitigation must be approved by MMC, RE and/or MM before ground disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.**
 - (1).Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under “D.”
 - c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
 - (1).Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
 - (2).Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
 - a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
 - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section 4.4.3.6-A.
 - c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
 - d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

4.4.3.4 Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

- A. Notification
 1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
 2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.
- B. Isolate discovery site
 1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
 2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
 3. If a field examination is not warranted, the Medical Examiner will determine with

input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
 - a. The NAHC is unable to identify the MLD, **OR** the MLD failed to make a recommendation within 48 hours after being notified by the Commission, **OR**;
 - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, **THEN**
 - c. To protect these sites, the landowner shall do one or more of the following:
 - (1) Record the site with the NAHC;
 - (2) Record an open space or conservation easement; or
 - (3) Record a document with the County.
 - d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 4.4.3.5.c., above.

D. If Human Remains are **NOT** Native American

1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

4.4.3.5 Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Pre-maintenance meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries
In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via fax by 8AM of the next business day.
 - b. Discoveries
All discoveries shall be processed and documented using the existing procedures detailed in Sections 4.4.3.3 - During Maintenance, and 4.4.3.4 – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
 - c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Sections 4.4.3.3 During Maintenance and 4.4.3.4-Discovery of Human Remains shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section 4.4.3.3-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of maintenance
 - 1. The Maintenance Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
 - 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

4.4.3.6 Post Maintenance

- A. Submittal of Draft Monitoring Report
 - 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
 - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.

- b. Recording Sites with State of California Department of Parks and Recreation
The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
 2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
 3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
 4. MMC shall provide written verification to the PI of the approved report.
 5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Artifacts
1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
 2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.
- C. Curation of artifacts: Accession Agreement and Acceptance Verification
1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
 2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section 4.4.3.4 – Discovery of Human Remains, Subsection C.
 3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
 4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
 5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

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4.5 HYDROLOGY

4.5.1 Existing Conditions

Watershed and Drainage Characteristics

The study area for this hydrology evaluation includes portions of 7 of the 11 HUs identified in the 1994 San Diego RWQCB *Water Quality Control Plan for the San Diego Basin* (Basin Plan). The Basin Plan encompasses approximately 3,900 square miles in the southwestern portion of California. HUs are defined in the Basin Plan as “[t]he entire watershed of one or more streams...” Summary descriptions of the seven HUs are provided below, with maintenance area locations and descriptions included on Figure 3-1 and Table 3-1 in Chapter 3.0, Project Description.

- San Dieguito HU (5.0) – The San Dieguito HU is a generally rectangular-shaped area of approximately 350 square miles associated with the San Dieguito River watershed. Major tributaries and water bodies include Santa Ysabel and Santa Maria creeks, and Lakes Sutherland, and Lake Hodges. Four maintenance areas identified under the proposed plan are located within the San Dieguito HU.
- Peñasquitos HU (6.0) – The Peñasquitos HU is a rectangular-shaped area of approximately 170 square miles associated with several smaller drainages including Peñasquitos, Rose Canyon, and San Clemente Canyon creeks. Water bodies within this HU include Los Peñasquitos (Sorrento) Lagoon, Mission Bay, and Miramar reservoir.
- San Diego HU (7.0) – The San Diego HU is a long, generally triangular-shaped area of approximately 440 square miles that encompasses the San Diego River watershed. Major water bodies within this area include El Capitan, San Vicente, and Murray reservoirs, as well as Lake Jennings and Lake Cuyamaca.
- Pueblo San Diego HU (8.0) – The Pueblo San Diego HU is a small, rectangular area encompassing approximately 60 square miles. No major drainages occur within this HU, with much of the western HU boundary adjacent to San Diego Bay.
- Sweetwater HU (9.0) – The Sweetwater HU is a linear area encompassing approximately 160 square miles associated with the Sweetwater River watershed. Major water bodies within this unit include the Sweetwater and Loveland reservoirs, as well as the southern portion of San Diego Bay.
- Otay HU (10.0) – The Otay HU is a club-shaped area of approximately 160 square miles associated with the Otay River and related tributaries including Jamul and Dulzura creeks. Major water bodies within this HU include Upper and Lower Otay reservoirs.

- Tijuana HU (11.0) – The Tijuana HU is a triangular-shaped area of approximately 470 square miles that encompasses the portions of the Tijuana River watershed north of the international border. Principal drainages include portions of the Tijuana River in the westernmost portion of the HU, as well as Campo and Cottonwood creeks. Major water bodies within this unit include Morena Reservoir, Barrett Lake, and the Tijuana Estuary.

All of the described HUs and associated drainage courses are ultimately tributary to the Pacific Ocean, with several encompassing coastal lagoons and embayments, as noted above.

Groundwater

Groundwater resources within the San Diego Region occur within unconsolidated alluvial materials, semi-consolidated sediment, and bedrock. The principal aquifers within the study area are mainly alluvial and associated with larger drainage courses, including the San Dieguito, San Diego, Sweetwater, Otay, and Tijuana Rivers. Alluvial aquifers in the San Diego Region are typically: (1) associated with unconsolidated deposits of mostly of sand and gravel; (2) shallow in depth, generally not exceeding 200 feet; (3) unconfined (i.e., not under pressure due to confinement by impermeable strata); (4) recharged primarily through infiltration of surface flows (e.g., precipitation and irrigation); and (5) subject to increased contaminant levels in more developed areas. A notable exception to the above discussion occurs in the form of the San Diego Formation Aquifer, which is located in the southwestern portion of San Diego County and occurs in sedimentary strata including sandstone, conglomerate, bentonite, and mudstone. The noted aquifer extends from Mission Bay south to the international border, and east into areas including Mission Valley, Otay Mesa, and the Tijuana River Valley. In addition to the described groundwater sources, perched aquifers also may occur locally within the study area. Perched groundwater generally consists of one or more unconfined aquifers underlain by impermeable or semi-permeable strata, with such aquifers typically limited in volume and extent but subject to variation with seasonal precipitation and/or irrigation levels.

Regulatory Framework

Maintenance activities conducted under the Master Program would be subject to a number of regulatory requirements related to hydrology. The principal sources for these requirements include the City grading and storm water standards.

4.5.2 Impacts

Significance Criteria

According to the City's Significance Determination Thresholds (2011), impacts to hydrology would be significant if the project would:

- Substantially increase flooding of upstream or downstream properties or to environmental resources;

- Substantially modify existing drainage patterns in a manner that would result in significant impacts on downstream properties or to environmental resources; or
- Grade, clear, or grub more than one acre of land that would drain into a sensitive water body or stream causing uncontrolled runoff resulting in erosion and sedimentation; or
- Extract water from an aquifer resulting in decreased aquifer recharge resulting in significant impacts on hydrologic conditions and well-water supplies.

Analysis of Impacts

Issue 1: Would the Master Program result in an increase in impervious surfaces or a substantial alteration of on and offsite drainage patterns, affecting the rate and volume of surface runoff, associated flooding hazards, or aquifer recharge?

As discussed in Subchapter 3.2, the objectives of the Master Program include efforts to reduce potential flood hazards from the accumulation of materials and vegetation within storm water facilities, and related effects to system operation and capacity. As a result, the anticipated maintenance activities would be expected to generate beneficial effects with respect to storm water system function.

No significant adverse impacts on hydrology would be expected. Maintenance activities under the Master Program would not include the installation of additional impervious surfaces such as pavement or structures. Accordingly, no adverse impacts related to increased runoff volumes or velocities, associated flooding hazards, or long-term aquifer recharge would occur from the Master Program.

Maintenance activities would not affect existing drainage patterns. Maintenance activities allowed by the Master Program would restore the ability of storm water facilities to convey flood waters without modifying the existing drainage patterns. The proposed removal of accumulated sediment, debris, and vegetation would eliminate obstructions to flow within the maintained facilities but would not modify the existing drainage patterns.

The construction of temporary ramps to facilitate equipment access in storm water facilities would generally not result in substantial obstructions that would significantly affect drainage patterns. Such structures would typically be located along one side of the drainage (i.e., they would not span the drainage or extend into the low-flow portion of the channel), and would be removed after completion of maintenance operations.

Water by-pass operations would result in minor, temporary localized changes to drainage patterns resulting from erection of temporary barriers to direct flows around maintenance activities. Because diverted flows would be temporary in nature and would be directed to downstream locations within the same storm water facilities (e.g., drainage channels), no associated significant impacts would result.

Maintenance activities would not affect groundwater levels. As no new impermeable surface would be added to the drainage facilities, maintenance would not restrict the absorption of water into the groundwater table. The short-term nature of temporary by-pass operations would minimize any effect on local groundwater levels. In reality, reducing the vegetation within the drainage channel would eliminate the loss of potential groundwater that would otherwise result from transpiration.

Significance of Impacts

Program implementation would not: (1) substantially alter on- or off-site drainage patterns; (2) result in any substantial increase in impervious surface area or associated runoff volumes and velocities; (3) generate any associated flooding hazards; or (4) substantially affect the level or recharge capacity of any groundwater aquifers. As a result, no significant hydrology impacts are anticipated.

Mitigation Measures, Monitoring and Reporting Program

No significant impacts are identified; therefore, no mitigation is required.

4.6 NOISE

4.6.1 Existing Conditions

Noise Definition

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is defined as unwanted sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of measurement of sound pressure is a decibel (dB). Because noise and sound can vary in intensity over one million times within the human hearing range, a logarithmic loudness scale is used to characterize dB values at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called “A-weighting,” written as dB(A). Hourly average noise levels are usually expressed as dB(A) L_{eq} or the equivalent noise level over that period of time. Because community receptors are more sensitive to noise intrusion during the evening and at night, state law requires that an artificial dB(A) increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL). Land use compatibility relative to traffic noise is typically displayed as CNEL, which incorporates all single noise events within a weighted 24-hour period. L_{dn} is another 24-hour noise descriptor that is virtually identical (less than 0.5 dB) to the CNEL descriptor. However, it is not weighted between the hours of 7 p.m. and 10 p.m. As such, CNEL is more restrictive.

Noise Standards

General community noise and land use compatibility guidelines are set forth in the Noise Element in the City’s General Plan as shown in Table 4.6-1, Land Use – Noise Compatibility Guidelines Equivalent Level (CNEL) in decibels. These guidelines are based primarily on noise and land use recommendations from the State Department of Health Office of Noise Control. They are further modified based on the U.S. Department of Housing and Urban Development (HUD) document entitled “Planning Guidelines for Local Agencies.” An exterior noise exposure of 65 dB(A) CNEL is compatible with residential and other noise sensitive uses. Noise standards for offices (business and professional) are 70 dB(A) CNEL. Least sensitive commercial, manufacturing, and some recreational uses are considered compatible with noise levels up to 75 dB(A) CNEL.

Table 4.6-1 LAND USE - NOISE COMPATIBILITY GUIDELINES					
Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	>60	60-65	65-70	70-75	75<
Open Space and Parks and Recreational					
Community & Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor, Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maintenance Facilities					
Agricultural					
Crop Raising & Farming; Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Units; Mobile Homes; Senior Housing		45			
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations		45	45		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		45			
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		45	45		
Cemeteries					
Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Research & Development				50	

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level.
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas.
		Outdoor Uses	Feasible noise mitigate techniques should be analyzed and incorporated to make the outdoor activities acceptable.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

An interior sound level of 45 dB(A) is mandated by State law for multi-family dwellings. This interior noise level is considered desirable for single-family dwellings as well by the City. With standard construction practice and closed windows, exterior-to-interior attenuation of 15 dB(A) can generally be achieved. Thus, interior noise levels of 45 dB(A) can normally be met in areas of ambient noise of up to 60 dB(A) CNEL as long as they have the option of closing their windows. The ability to close windows to shut out noise requires supplemental ventilation.

Fixed source and/or operational noise governed by the City Noise Abatement and Control Ordinance Section 59.5.0401. The applicable sound level is a function of the time of day and land use zone. Sound levels are measured at the property line of the noise source. The limits are given in Table 4.6-2.

Land Use Zone ¹	Time of Day	1-Hour Average Sound Level (dB)
Residential: All R-1	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
All R-2	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
R-3, R-4, and all other residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50

Table 4.6-2 (cont.) CITY OF SAN DIEGO NOISE ORDINANCE LIMITS		
Land Use Zone¹	Time of Day	1-Hour Average Sound Level (dB)
All commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
Manufacturing, all other industrial (including agriculture and extractive industry)	Any time	75

Source: City Noise Abatement and Control Ordinance Section 59.5.0401

¹The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts

Subsections A, B, and C of Section 59.5.0404 of the City Land Development Code establish the following limitations on construction noise.

- A. It shall be unlawful for any person between the hours of 7 p.m. of any day and 7 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Land Development Code, with exception of Columbus Day, Washington’s Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter, or repair any building or structure in such a manner as to create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such a permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic, particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and the Administrator shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he or she deems to be required in the public interest.
- B. Except as provided in Subsection C. hereof, it shall be unlawful for any person, including the City, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 a.m. to 7:00 p.m.
- C. The provisions of Subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

Existing Ambient Noise Levels

The storm water facilities included in the Master Program occur in various land use contexts and, thus, exhibit variable ambient noise levels. The majority of the facilities are located in urban areas where noise levels are dominated by traffic noise although sporadic, localized noise is generated by residential uses (e.g., lawn mowing). Adjacent commercial and industrial areas may generate noise levels related to heating and ventilation equipment and truck deliveries, as well as outdoor equipment operation. Lower ambient noise levels occur where storm water facilities pass through open space areas within the City.

4.6.2 Impacts

The focus of the following analysis is on the potential for the proposed project to result in short-term impacts on adjacent land uses which would result from periodic maintenance activities. Except for noise during maintenance activities, storm water facilities would not generate noise. Thus, no long-term noise-related impacts would occur.

Significance Criteria

The City's Significance Determination Thresholds (2011) state that a project may result in a significant noise impact if it would:

- Result in temporary noise which exceeds noise levels identified in Municipal Code 59.5.0404.

Analysis of Impacts

Issue 1: Would maintenance activities create noise levels that would exceed standards established by the City's Municipal Code?

Implementation of the Master Program would result in temporary noise during operation of equipment within the storm water facilities. Mechanical clearing would be utilized, whenever possible, to reduce cost. Depending on the conditions associated with each drainage facility, different types of equipment would be utilized. The decision as to which equipment would be used would be based upon the density and volume of accumulated material; the size of the drainage and access, which may preclude the use of certain types of equipment; the flow-characteristics of the drainage; and the need to complete maintenance activities in a timely and efficient manner. The types of equipment would include, but not be limited to, skid-steers, backhoes, Gradalls, excavators, loaders, dump trucks, and bulldozers. Maintenance equipment would utilize designated access roads.

In order to estimate the potential noise generated by a typical maintenance activity, assumptions were made as to the type of equipment associated with each of the proposed maintenance techniques. Equipment noise levels were based on statistics contained in the Federal Highway Administration's (FHWA) Construction Equipment Noise Levels and Ranges manual. The noise estimate assumes an average channel depth of 10 feet and width of 30 feet with sloping banks. Table 4.6-3 identifies the equipment noise levels based on the FHWA manual as well as an estimate of the percentage of the time the equipment would be used during maintenance activities.

Equipment	Usage Factor	Noise at 50 Feet
Dump truck	40%	84 dB(A)
Gradall	40%	85 dB(A)
Crane	40%	85 dB(A)
Loader	40%	80 dB(A)
Chainsaw	25%	83 dB(A)
Weed whip	40%	77 dB(A)

In-channel Maintenance (Full)

In most cases, equipment such as a skid-steer or bulldozer would enter the drainage using an existing or constructed access ramp and push the accumulated material with a bucket to a central site within the drainage. From there, material would be scooped up with a loader operating in the drainage, and loaded into a dump truck which also would be located in the drainage. The loaded dump truck would then leave the drainage and transport the material to an approved off-site disposal area; a maximum of five truckloads per hour are assumed. The average noise levels in areas surrounding maintenance activities are identified in Table 4.6-4.

Location	Feet from Channel Edge		dB(A) Distance (feet)			
	50	100	75	70	65	60
Access side	85.4	79.0	158	260	434	739
Opposite side	81.8	77.3	135	237	414	716

In-channel Maintenance (Partial)

Where direct access into the channel is not feasible, maintenance equipment would be lowered into the drainage facility from the bank using a crane or Gradall. Material would be scooped up from the channel using equipment operating from the edge of the drainage facility and loaded into a dump truck for off-site disposal. As with the full in-channel maintenance scenario, a maximum of five truckloads per hour are assumed. The average noise levels in areas surrounding maintenance activities are identified in Table 4.6-5.

Location	Feet from Channel Edge		dB(A) Distance (feet)			
	50	100	75	70	65	60
Access side	86.6	79.5	158	256	424	716
Opposite side	82.3	77.4	138	237	404	689

Edge Maintenance

Where access exists along the edge of the drainage facility, maintenance activities would rely on a Gradall or excavator positioned on the side of the drainage to scoop up the accumulated material. This method would be limited by the width and depth of the drainage, which may exceed the reach of the available equipment. The average noise levels in areas surrounding maintenance activities are identified in Table 4.6-6.

Location	Feet from Channel Edge		dB(A) Distance (feet)			
	50	100	75	70	65	60
Access side	84.1	76.3	115	178	273	440
Opposite side	75.2	71.2	56	119	217	384

Non-mechanical Clearing

Where equipment access is unavailable in the channel or along the edge of the channel, maintenance would be conducted with hand-held equipment. Workers would enter the channel with the necessary tools to cut and remove growth (e.g., chainsaws and weed whackers) to clear and cut brush. Brush would be manually hauled from the channel to the closest designated access for disposal. Non-mechanical clearing assumes that two chainsaws and two weed whips would be working in the channel with a dump truck making one run per hour. The average noise levels in areas surrounding maintenance activities are identified in Table 4.6-7.

Location	Feet from Channel Edge		dB(A) Distance			
	50	100	75	70	65	60
Access side	74.2	68.6	46	89	151	253
Opposite side	72.9	67.9	40	79	142	243

As indicated above, noise levels resulting from maintenance activities, depending on distance from maintenance activities, could be high enough to affect nearby sensitive receptors. In general, noise sensitive uses (e.g., residential development, churches, schools, etc) could experience noise levels in excess of 75 dB(A) if they occur within the following distances:

- 138 feet of in-channel (partial);
- 135 feet of in-channel (full);
- 115 feet of edge; and
- 46 feet of non-mechanical clearing.

Despite the fact that maintenance activities could generate noise levels greater than 75 dB(A), the maintenance activities would be subject to noise limitations imposed by the City's Noise Abatement and Control Ordinance. As a result, the noise levels associated with maintenance would not exceed a 75 dB(A) over an 8-hour period. Similarly, except in emergencies, maintenance would be limited to the hours of 7:00 a.m. and 7:00 p.m. on weekdays and Saturdays. Furthermore, maintenance equipment would be equipped with properly operating and maintained muffling devices.

Significance of Impact

Mandatory compliance with the City's Noise Abatement and Control Ordinance combined with advance noticing of nearby noise sensitive uses would reduce maintenance noise impacts to less than significant levels.

Mitigation Measures

As no significant noise impacts would occur, no mitigation measures are required.

4.7 PALEONTOLOGICAL RESOURCES

4.7.1 Existing Conditions

Paleontology is the science dealing with pre-historic plant and non-human animal life. Paleontological resources (or fossils) typically encompass the remains or traces of hard and resistant materials such as bones, teeth, or shells, although plant materials and occasionally less resistant remains (e.g., tissue or feathers) also may be preserved. The potential for fossil remains at a location can be predicted through established correlations between the fossils and geologic formations. For this reason, knowledge of the geology of a particular area and the paleontological resource sensitivity of particular formations makes it possible to predict where fossils may occur.

The area encompassing the City’s storm water system includes numerous surficial deposits and geologic formations. As illustrated in Table 4.7-1 and summarized below, a number of these geologic formations have a moderate to high potential to contain significant deposits of fossils.

Geologic Unit	Potential Fossil Localities	Sensitivity Rating
Alluvium	All communities where this unit occurs	Low
Ardath Shale	All communities where this unit occurs	High
Bay Point/Marine Terrace	All communities where this unit occurs	High
Cabrillo Formation	All communities where this unit occurs	Moderate
Delmar Formation	All communities where this unit occurs	High
Friars Formation	All communities where this unit occurs	High
Granitic/Plutonic	All communities where this unit occurs	Zero
Lindavista Formation	A. Mira Mesa/Tierrasanta B. All other areas	A. High B. Moderate
Lusardi Formation	A. Black Mountain Ranch/Lusardi Canyon Poway/ Rancho Santa Fe B. All other areas	A. High B. Moderate
Mission Valley Formation	All communities where this unit occurs	High
Mt. Soledad Formation	All communities where this unit occurs	Moderate
Otay Formation	All communities where this unit occurs	High
Point Loma Formation	All communities where this unit occurs	High
Pomerado Conglomerate	A. Scripps Ranch/Tierrasanta B. All other areas	A. High B. Moderate
River/Stream Terrace Deposits	A. South Eastern Chollas Valley/Fairbanks Ranch Skyline/Paradise Hills/Otay Mesa Nestor/San Ysidro B. All other areas	A. Moderate B. Low
San Diego Formation	All communities where this unit occurs	High

Geologic Unit	Potential Fossil Localities	Sensitivity Rating
Santiago Peak Volcanics A. Metasedimentary B. Metavolcanic	A. Black Mountain Ranch/La Jolla Valley/ Fairbanks Ranch/Mira Mesa/Peñasquitos B. All other areas	A. Moderate B. Zero
Scripps Formation	All communities where this unit occurs	High
Stadium Conglomerate	All communities where this unit occurs	High
Sweetwater Formation	All communities where this unit occurs	High
Torrey Sandstone	A. Black Mountain Ranch/Carmel Valley B. All other areas	A. High B. Low

Source: City (2011)

Alluvium

Alluvial materials are associated primarily with larger active stream channels, and generally encompass variable amounts of silt, sand, and gravel. These deposits are approximately 10,000 years or less in age (Holocene), and typically do not contain important fossils in the Coastal Plain region. Notable exceptions do occur, however, including mammoth remains found in floodplain deposits of the Tijuana River Valley. Within the Program area, late Quaternary alluvial deposits occur within larger drainages and associated floodplains such as Otay, Mission, Sorrento, and San Dieguito valleys as well as Rose Canyon. Because of their relatively young age and mode of deposition (i.e., high energy environments), these formations are assigned a low paleontological resource sensitivity.

Ardath Shale

The Ardath Shale is part of the La Jolla Group, and occurs generally from Soledad Valley to La Jolla, and from Pacific Beach to Clairemont. This formation is approximately 47 to 48 million years old (middle Eocene), and has yielded diverse and well-preserved assemblages of marine microfossils, invertebrates, and vertebrates. Due to the nature and quality of the described fossil assemblages, a high paleontological resource sensitivity is assigned to the Ardath Shale.

Bay Point/Marine Terrace

The Bay Point Formation is a nearshore marine sedimentary deposit that is approximately 220,000 years old (late Pleistocene), and is exposed along the northern shore of Mission Bay (i.e., Crown Point) and portions of the San Diego waterfront. This unit has produced a large and diverse number of well-preserved fossil marine invertebrates, along with rare vertebrate fossils including sharks, rays, and bony fishes. Accordingly, this unit is assigned a high paleontological resource sensitivity.

Unnamed marine terrace deposits are between approximately 80,000 to 180,000 years old (Late Pleistocene). These deposits have a moderate to high paleontological resource sensitivity due to the large variety of marine vertebrate and invertebrate fossils that have been recovered from them.

Cabrillo Formation

The Cabrillo Formation is composed primarily of marine sandstones and conglomerates, and occurs along the eastern and southwestern sides of the Point Loma peninsula in coastal cliffs and road cuts, as well as on Mount Soledad. This formation is approximately 70 million years old (late Cretaceous), and has produced marine invertebrates and vertebrates. Based on the nature of recovered materials, the Cabrillo Formation is assigned a moderate paleontological sensitivity.

Delmar Formation

The Delmar Formation is part of the La Jolla Group, and occurs from Sorrento Valley to Batiquitos Lagoon, with the best exposures located in coastal cliffs between Torrey Pines State Reserve and Encinitas. This formation is approximately 49 to 50 million years old (early to middle Eocene), with fossils from this formation including estuarine vertebrates and invertebrates, aquatic reptiles, and terrestrial mammals. Due to the nature and diversity of associated fossils, the Delmar Formation is assigned a high paleontological resource sensitivity.

Friars Formation

The Friars Formation is the uppermost unit of the La Jolla Group, a series of interbedded marine, lagoonal and non-marine sedimentary rocks. This formation occurs from Mission Valley north to Rancho Santa Fe, and from Tecolote Canyon east to Santee/Lakeside. The Friars Formation is approximately 46 million years old (middle Eocene), with fossil occurrences including a rich assemblage of vertebrates (especially terrestrial mammals), marine microfossils and invertebrates, and terrestrial plants. Accordingly, this formation is assigned a high paleontological resource sensitivity.

Granitic/Plutonic

Much of the San Diego region is underlain by granitic bedrock associated with the Southern California Batholith. These materials are generally early Cretaceous in age and were emplaced as molten material that subsequently crystallized to form regional granitic/plutonic bodies (with these rocks exposed by subsequent uplift/erosion in many areas). Due to their described molten nature of formation, granitic/plutonic materials exhibit no potential for the occurrence of sensitive paleontological resources.

Lindavista Formation

This distinctive, rust-colored formation includes marine and/or non-marine terraces deposited on level wave-cut platforms during a period of dropping sea levels. The Lindavista Formation is approximately 0.5 to 1.5 million years in age (early Pleistocene), and occurs extensively as mesa surfaces in the Otay Mesa, San Diego Mesa, Linda Vista Mesa, Kearny Mesa, and Mira Mesa areas. Fossils are rare in this formation and have only been recorded in a few areas, including Mira Mesa and Tierrasanta. Accordingly, the Lindavista Formation is assigned a high paleontological resource sensitivity in Mira Mesa and Tierrasanta, and a moderate sensitivity in all other areas.

Lusardi Formation

The Lusardi Formation consists of marine sandstones and conglomerates, with local occurrences including Lusardi and La Zanja canyons near Rancho Santa Fe, and the Poway area. This formation is approximately 80 million years old (late Cretaceous) and has produced a large number of vertebrate and invertebrate fossils. Based on these conditions, the Lusardi Formation is assigned a high paleontological resource sensitivity in the Black Mountain Ranch/Lusardi Canyon, Rancho Santa Fe, and Poway areas, and a moderate sensitivity in other locations.

Mission Valley Formation

This unit is the middle member of the Poway Group and consists of marine and non-marine sedimentary rocks that occur discontinuously from Otay Valley to Miramar Reservoir and from Old Town to Spring Valley and Santee. The Mission Valley Formation is approximately 42 million years old (middle Eocene), with the marine strata having produced abundant and generally well-preserved microfossils, invertebrates, and vertebrates. The non-marine portions of this formation have yielded well-preserved samples of petrified wood as well as fairly large and diverse assemblages of fossil land mammals. The occurrence of both terrestrial and marine fossil assemblages in this formation is extremely important paleontologically, as it allows for the direct correlation of terrestrial and marine faunal time scales. Accordingly, the Mission Valley Formation is assigned a high paleontological resource sensitivity.

Mt. Soledad Formation

The Mount Soledad Formation is the lowest (oldest) member of the La Jolla Group, and occurs in the vicinity of Rose Canyon, Tourmaline Beach, the north end of Point Loma, and Mount Soledad. This formation is approximately 48 to 50 million years old (early to middle Eocene), and has yielded fossils of various kinds of marine organisms (including marine microfossils and invertebrates), as well as pollen. Based on the somewhat limited nature and distribution of fossil occurrences, this formation is assigned a moderate paleontological resource sensitivity.

Otay Formation

The Otay Formation is a fluvial (river deposited) sedimentary unit that is exposed in portions of Otay Mesa, as well as areas west of the Sweetwater Reservoir. This formation is approximately 29 million years old (late Oligocene), with a well-preserved and diverse assemblage of important terrestrial vertebrate fossils recovered from the upper (sandstone-mudstone) unit. Based on these discoveries, the Otay Formation is considered to be the richest source of late Oligocene terrestrial vertebrates in California, and is assigned a high paleontological resource sensitivity.

Point Loma Formation

The Point Loma Formation includes a series of alternating marine shales, mudstones, and sandstones, and occurs along the western side of Point Loma and the northern flank of Mount Soledad. This formation is approximately 75 million years old (late Cretaceous) and has

produced numerous well-preserved and diverse marine invertebrates and vertebrates, as well as occasional terrestrial plants and dinosaurs. The paleontological resources of the Point Loma Formation represent some of the best-preserved examples of late Cretaceous marine fossils known from California and one of the few sources of dinosaur fossils in the state. Accordingly, this formation is assigned a high paleontological sensitivity.

Pomerado Conglomerate

The Pomerado Conglomerate is the uppermost formation of the Poway Group, a sequence of primarily non-marine conglomerate and sandstone units. This formation occurs generally from La Mesa north to at least Miramar Reservoir, and east to Santee. The lower and middle portions of the Pomerado Conglomerate are between approximately 40 and 42 million years old (middle Eocene), with the lower member producing terrestrial mammal fossils (including insectivores, primates, and rodents) in the Scripps Ranch area. The middle member has yielded nearshore marine mollusks (e.g., clams and snails) and unidentifiable mammal bone fragments. Based on the noted occurrences, the Pomerado Conglomerate is assigned a high paleontological resource sensitivity in the Scripps Ranch and Tierrasanta areas, and a moderate sensitivity in other locations.

River/Stream Terrace Deposits

River terrace deposits consist of coarse-grained gravelly sandstones, pebble/cobble conglomerates, and claystones, and are present along the edge of many larger coastal valleys. These materials generally occur at levels above the active stream channels and represent sediments deposited by ancient river courses. River terrace deposits are typically between approximately 10,000 and 500,000 years old (late Pleistocene), and while fossil occurrences are uncommon, important resources have been recovered from these deposits. Specifically, a number of vertebrate remains have been collected from river terrace deposits, including ground sloth, mammoth, wolf, camel, and mastodon fossils from the South Bay Freeway; and well-preserved ground sloth remains from the San Dieguito River Valley. Because fossil occurrences in river terrace deposits are uncommon but high value materials have been recovered, this unit is assigned a moderate paleontological resource sensitivity in the southeastern Chollas Valley, Fairbanks Ranch, Skyline, Paradise Hills, Otay Mesa, Nestor, and San Ysidro areas, and a low sensitivity for other locations.

San Diego Formation

The San Diego Formation is a marine sedimentary deposit, and is extensively exposed from Otay Mesa/Otay Ranch to Mission Valley (with isolated occurrences between Rose Canyon and Pacific Beach). This formation is between approximately 1.5 and 3 million years old (late Pliocene), and has produced extremely diverse assemblages of marine organisms, as well as rare terrestrial mammal and plant fossils. The San Diego Formation represents one of the most important sources of information on Pliocene marine organisms and environments in the world, and is assigned a high paleontological resource sensitivity.

Santiago Peak Volcanics

The Santiago Peak Volcanics include moderately metamorphosed volcanic rocks, including localized deposits of volcaniclastic materials (i.e., sedimentary units derived from weathered volcanic rocks). This formation occurs more commonly in locations east of the Program area, but is exposed or present at shallow depths in portions of Otay Valley, Peñasquitos Canyon, the San Diego River Valley, La Zanja Canyon, and the San Dieguito River Valley. The Santiago Peak Volcanics are approximately 120 to 130 million years old (early Cretaceous), with important marine microfossils and invertebrate fossils known from the volcaniclastic metasedimentary units. Accordingly, metasedimentary rocks from this formation are assigned a moderate paleontological resource sensitivity in the Black Mountain Ranch, La Jolla Valley, Fairbanks Ranch, Mira Mesa, and Peñasquitos areas. No potential for sensitive paleontological resources is present in all other units and locations of this formation, due to the molten nature of formation for volcanic rocks.

Scripps Formation

The Scripps Formation is part of the La Jolla Group, and occurs from Presidio Park north to Del Mar, and from Clairemont east to La Jolla Valley. This formation is approximately 47 million years old (middle Eocene), and has yielded predominantly marine vertebrate and invertebrate fossils, although reptiles, mammals, and plant remains also have been recovered. Based on the described fossil occurrences, the Scripps Formation is assigned a high paleontological resource sensitivity.

Stadium Conglomerate

The Stadium Conglomerate is the lower member of the Poway Group, and includes two conglomeratic units that are distinct with respect to both composition and the time of formation. The two described units can occur either together or separately, with observed locations in the Mission Valley, Murphy Canyon, Tierrasanta, Rancho Peñasquitos, and Rancho Bernardo areas. Both members of this formation are middle Eocene, with ages ranging from approximately 42 to 43 million years old for the upper member, and 43 to 44 million years for the lower (Cypress Canyon) member. Fossil occurrences in the Stadium Conglomerate include marine microfossils and invertebrates, as well as sparse but well-preserved vertebrates from the upper member, and abundant and diverse assemblages of land mammals from the Cypress Canyon Member. Based on these fossil occurrences, the Stadium Conglomerate is assigned a high paleontological resource sensitivity.

Sweetwater Formation

The Sweetwater Formation is a non-marine sedimentary deposit that occurs in the central and eastern portions of Otay Valley, as well as areas to the north and east (including Lower Otay Lake and Sweetwater Valley). This formation is approximately 37 to 42 million years in age (middle Eocene), and has produced important dental remains of terrestrial mammals. Accordingly, the Sweetwater Formation is assigned a high paleontological resource sensitivity.

Torrey Sandstone

The Torrey Sandstone is a member of the La Jolla Group, and occurs from Sorrento Valley to Batiqitos Lagoon, and inland from the coast to La Jolla Valley. This formation is approximately 48 to 49 million years old (early to middle Eocene) and has produced important fossil plants and marine invertebrates. Based on the nature, location, and quality of recovered materials, the Torrey Sandstone is assigned a high paleontological resource sensitivity in the Black Mountain Ranch/Carmel Valley vicinity, and a low potential in all other areas.

Unnamed Formation

An unnamed formation consisting of terrestrial sedimentary rocks occurs in the Rose Canyon area between Mission Bay and SR-52. This formation is approximately 51 to 55 million years old (early Eocene), with associated fossil discoveries including dental remains of terrestrial mammals. Based on the nature of associated fossil materials, this formation is assigned a high paleontological resource sensitivity.

4.7.2 Impacts

Significance Criteria

The City's Significance Determination Thresholds (2011) state that a project may significantly impact paleontological resources if it would:

- Grade/excavate more than 1,000 cubic yards of material and extend to depths of 10 feet or more in geologic formations with a high paleontological sensitivity rating;
- Grade/excavate more than 2,000 cubic yards of material and extend to depths of 10 feet or more in geologic formations with a moderate paleontological sensitivity rating;
- Grade/excavate to a depth less than 10 feet within an area that has been previously graded and where unweathered formations with moderate or high sensitivity are present at the surface; and/or
- Grade/excavate within a fossil recovery site or near a fossil recovery site within the same geologic formation as the project site.

Analysis of Impacts

Issue 1: Would the project impact paleontological resources?

Despite the presence of a number of fossil-bearing formations, the potential for maintenance activities to significantly impact important fossil resources is considered low. In general, maintenance activities would not penetrate areas which exhibit a moderate to high potential for significant fossil deposits. As described in Chapter 3.0, Project Description, excavation activities within storm water facilities would be limited to sediment removal and would not encroach into undisturbed geologic formations. Although limited, the potential does exist for encroachment into fossil-bearing formations in the course of constructing new or reconstructing existing access

roads. Encroachment beyond the significance thresholds cited above would constitute a significant impact on paleontological resources.

Significance of Impact

The potential for significant impacts to paleontological resources from proposed maintenance activities is considered to be generally low, although significant impacts could occur depending on site-specific geologic conditions and proposed grading/ground disturbance. With incorporation of the monitoring and mitigation measures (where applicable), impacts to paleontological resources would be avoided or reduced to less than significant levels.

Mitigation Measures, Monitoring and Reporting

The following measure shall be implemented prior to the first time maintenance occurs within a drainage facility pursuant to the Master Program. Once a maintenance area has been surveyed and paleontological resources identified, no further investigation shall be required, provided protective measures required to preserve known sites within the maintenance area are implemented during subsequent maintenance activities, and monitoring measures are in place if the maintenance area has been identified as having a moderate to high potential for paleontological resources.

Mitigation Measure 4.7.1: Prior to initiating any maintenance activity where significant paleontological resources may occur within the APE, the following actions shall be taken.

4.7.1.1 Prior to Permit Issuance or Bid Opening/Bid Award

- A. Entitlements Plan Check
 1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate maintenance documents.
- B. Letters of Qualification have been submitted to ADD
 1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the paleontological monitoring program, as defined in the City of San Diego Paleontology Guidelines.
 2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the project.
 3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

4.7.1.2 Prior to Start of Maintenance

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site specific records search has been completed. Verification includes, but is not limited to a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Pre-maintenance Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Pre-maintenance Meeting that shall include the PI, Maintenance Manager (MM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Pre-maintenance Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Maintenance Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Pre-maintenance Meeting, the Applicant shall schedule a focused Pre-maintenance Meeting with MMC, the PI, RE, MM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.
3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate maintenance documents (reduced to 11x17) to MMC for approval identifying the areas to be monitored including the delineation of grading/excavation limits. Monitoring shall begin at depths below 10 feet from existing grade or as determined by the PI in consultation with MMC. The determination shall be based on site specific records search data which supports monitoring at depths less than ten feet.
 - b. The PME shall be based on the results of a site specific records search as well as information regarding existing known soil conditions (native or formation).
 - c. MMC shall notify the PI that the PME has been approved.
4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a maintenance schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during maintenance requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final maintenance documents which indicate conditions such as depth of excavation

- and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.
5. Approval of PME and Maintenance Schedule
After approval of the PME by MMC, the PI shall submit to MMC written authorization of the PME and Maintenance Schedule from the MM.

4.7.1.3 During Maintenance

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, jacking and receiving pits, services and all other appurtenances associated with underground utilities as identified on the PME that could result in impacts to formations with high and/or moderate resource sensitivity. **The Maintenance Manager is responsible for notifying the RE, PI, and MMC of changes to any maintenance activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the PME.**
2. The PI may submit a detailed letter to MMC during maintenance requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.
3. The monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be faxed by the MM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Paleontological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or BI, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.

C. Determination of Significance

1. The PI shall evaluate the significance of the resource.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.

- b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC, MC and/or RE. PRP and any mitigation must be approved by MMC, RE and/or MM before ground disturbing activities in the area of discovery will be allowed to resume.
 - (1). Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under “D.”
 - c. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or BI as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to monitor the area without notification to MMC unless a significant resource is encountered.
 - d. The PI shall submit a letter to MMC indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.
 - (1). Note: For Pipeline Trenching Projects Only. If the fossil discovery is limited in size, both in length and depth; the information value is limited and there are no unique fossil features associated with the discovery area, then the discovery should be considered not significant.
 - (2). Note, for Pipeline Trenching Projects Only: If significance cannot be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.
- D. Discovery Process for Significant Resources - Pipeline Trenching Projects
- The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance.
- 1. Procedures for documentation, curation and reporting
 - a. One hundred percent of the fossil resources within the trench alignment and width shall be documented in-situ photographically, drawn in plan view (trench and profiles of side walls), recovered from the trench and photographed after cleaning, then analyzed and curated consistent with Society of Invertebrate Paleontology Standards. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact and so documented.
 - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section 4.7.1.1-A.
 - c. The PI shall be responsible for recording (on the appropriate forms for the San Diego Natural History Museum) the resource(s) encountered during the Paleontological Monitoring Program in accordance with the City’s Paleontological Guidelines. The forms shall be submitted to the San Diego Natural History Museum and included in the Final Monitoring Report.
 - d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

4.7.1.4 Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Pre-maintenance meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries
In the event that no discoveries were encountered during night and/or weekend work, The PI shall record the information on the CSV and submit to MMC via the RE via fax by 8AM on the next business day.
 - b. Discoveries
All discoveries shall be processed and documented using the existing procedures detailed in Section 4.7.1.3 - During Maintenance.
 - c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section 4.7.1.3 - During Maintenance shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8AM on the next business day to report and discuss the findings as indicated in Section 4.7.1.3-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of maintenance
 - 1. The Maintenance Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
 - 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

4.7.1.5 Post Maintenance

- A. Preparation and Submittal of Draft Monitoring Report
 - 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Paleontological Guidelines which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring,
 - a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with the San Diego Natural History Museum
The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.

2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
 3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
 4. MMC shall provide written verification to the PI of the approved report.
 5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Fossil Remains
1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.
- C. Curation of artifacts: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
 2. The PI shall submit the Deed of Gift and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
 3. The RE or BI, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.
 4. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

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4.8 WATER QUALITY

The following discussion of water quality is based largely on a technical paper prepared by Weston Solutions, Inc. (Weston), which is contained in Appendix F. Weston completed an extensive literature review and conducted several field tests in order to develop a model for assessment and quantification of potential water quality impacts due to flood control channel maintenance within the City of San Diego. This model is described in the Standard Operating Procedures (SOP) contained in Appendix A of Appendix F. The model provides a threshold by which appropriate mitigation measures and their effectiveness can be determined.

4.8.1 Existing Conditions

Overview

Water quality varies throughout the watersheds within which the storm water facilities are located. Water quality is dependent on two primary factors: (1) water pollutant sources, and (2) the conditions which exist within each storm water facility (e.g. vegetation type, substrate material and flow regime). Each of these factors is discussed below.

Pollutant Sources

The study area includes substantial urban development comprised of a variety of development types including residential, commercial, and industrial land uses. Significant areas of landscaping as well as pavement and other types of impervious cover occur within the drainage areas of the storm water facilities included in the Master Program. In addition, areas of open space, including both previously disturbed areas and native habitats, also exist within the watershed within which the storm water facilities are located. A number of pollutant sources are associated with urban areas including both point and non-point sources. Specifically, point sources encompass defined flows or discharges such as drainage courses, storm drains, outfalls, and pipelines, while non-point sources include unconfined drainage such as overland or sheet flow, and are generally not traceable to a specific source.

Urban runoff typically contains greater concentrations of pollutants than non-urban runoff, and potentially includes pollutants such as total suspended solids, sediment, floatables (e.g., trash and debris), synthetic organics (e.g., pesticides, herbicides and polychlorinated biphenyls [PCBs]), oxygen-demanding substances (e.g., decaying vegetation, animal waste), heavy metals (copper, lead, zinc and cadmium), hydrocarbons (e.g., oil and grease), pathogens (e.g., bacteria and viruses), and nutrients (e.g., nitrogen and phosphorus).

All of these pollutants can adversely affect receiving waters, as well as associated plant and animal life, and human health and safety. Specific pollutant issues and sources may include: (1) the presence of pathogens in coastal waters and related effects to human health due to upstream conditions such as leaking sewer or septic systems; (2) the discharge of elevated concentrations of pollutants such as oil and grease, solvents, and pesticides into biological environments (e.g., wetlands) and related effects to plant and animal life, with pollutant sources including roads, parking areas, and construction sites; (3) the occurrence of eutrophication (e.g., algal blooms) in

downstream receiving waters as a result of excessive nutrients from sources including chemical fertilizers; (4) the downstream transport of eroded material (i.e., sedimentation) from sources such as construction-related grading and excavation, with associated adverse effects to aquatic life from conditions including turbidity; and, (5) the discharge of metals from sources such as the deterioration of galvanized metal, paint or treated lumber, and associated toxic effects to downstream plant and animal life. A summary of typical pollutant sources and loadings for various land use types is provided in Tables 4.8-1 and 4.8-2. While pollutant levels often exhibit spikes in association with storm runoff, dry season pollutant levels also are considerable due to landscape irrigation runoff that transports pollutants in the curb, gutter and storm drains to receiving waters.

Historic and current surface water quality monitoring has been or is being conducted within the study area watersheds in association with mandates under the federal Clean Water Act (CWA), associated requirements of National Pollutant Discharge Elimination System (NPDES), and related local storm water standards (refer to the discussion of regulatory framework below for additional information). Specifically, these on-going efforts include wet and dry season monitoring, bioassessment studies, ambient lagoon/bay monitoring, and coastal storm water monitoring, most of which have been regularly conducted since 1998. The results of the described monitoring efforts have documented the regular exceedence of established water quality standards (e.g., the RWQCB Basin Plan) for a number of pollutant levels/conditions, including bacteria indicators (total coliform, fecal coliform, enterococcus) total dissolved solids (TDS), total suspended solids (TSS), turbidity, chemical pesticides (e.g., diazinon, chloropyrifos, malathion), metals (e.g., lead, zinc and copper), nutrients (e.g. total nitrogen, nitrate, total phosphorus) chemical oxygen demand (COD), biological oxygen demand (BOD), and toxicity to aquatic test species.

**Table 4.8-1
 SUMMARY OF TYPICAL POLLUTANT SOURCES FOR
 URBAN STORM WATER RUNOFF**

POLLUTANT	TYPICAL POLLUTANT SOURCES
Total Suspended Solids, Turbidity, Sediment and floatables	Streets, driveways, landscaping, construction, atmospheric deposition, erosion
Pesticides	Landscaping, roadsides, utility right-of-ways, soil wash-off
Organic materials	Landscaping, trash collection/disposal areas, animal wastes
Oxygen-demanding substances	Landscaping, animal wastes, trash collection/disposal areas, leaky sanitary sewer lines or septic systems, chemical spills
Metals	Automobiles, bridges, atmospheric deposition, industrial areas, soil erosion, corroding metal surfaces, combustion processes
Oil and grease/hydrocarbons	Roads, driveways, parking lots, vehicle maintenance areas, gas stations, illicit dumping to storm drains

POLLUTANT	TYPICAL POLLUTANT SOURCES
Bacteria and viruses	Over-irrigated landscaping, leaky sanitary sewer lines or septic systems, sanitary sewer cross-connections, animal wastes, transients, improper handling and management of food and solid waste, wildlife, birds, and plant regrowth
Nitrogen and phosphorus	Landscaping fertilizers, atmospheric deposition, automobile exhaust, soil erosion, animal wastes, detergents, leaky sanitary sewer lines or septic systems

Source: U.S. Environmental Protection Agency (USEPA 1999)

Land Use ¹	Pollutant ²									
	TSS	TP	TK N	NH ₃ – N	NO ₂ + NO ₃ – N	BOD	COD	Pb	Zn	Cu
Commercial	1000	1.5	6.7	1.9	3.1	62	420	2.7	2.1	0.4
Parking Lot	400	0.7	5.1	2	2.9	47	270	0.8	0.8	0.04
HDR	420	1	4.2	0.8	2	27	170	0.8	0.7	0.03
MDR	190	0.5	2.5	0.5	1.4	13	72	0.2	0.2	0.14
LDR	10	0.04	0.03	0.02	0.1	N/A ³	N/A	0.01	0.04	0.01
Freeway	880	0.9	7.9	1.5	4.2	N/A	N/A	4.8	2.1	0.37
Industrial	860	1.3	3.8	0.2	1.3	N/A	N/A	2.4	7.3	0.5
Park	3	0.03	1.5	N/A	0.3	N/A	2	0	N/A	N/A
Construction	6000	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: USEPA (1999)

¹HDR=High Density Residential; MDR=Medium Density Residential; LDR=Low Density Residential

²TSS=Total suspended solids; TP=Total Phosphorus; TKN=Total Kjeldahl Nitrogen; NH₃-N=Ammonia-Nitrogen; NO₂+NO₃-N=Nitrite+Nitrate minus Nitrogen; BOD=Biochemical Oxygen Demand; COD=Chemical Oxygen Demand; Pb=Lead; Zn=Zinc; Cu=Copper

³N/A=Not available; insufficient data to characterize

Based on the above information and the extensive level of urban development within the study area, overall surface water quality is generally moderate to poor. Groundwater quality within the study area also is expected to be generally moderate to poor due to salt water intrusion in coastal aquifers.

Local Water Quality Conditions

The State Water Resources Control Board (SWRCB) and RWQCBs produce bi-annual qualitative/quantitative assessments of statewide and regional water quality conditions. Since 1998, these assessments have focused on CWA Section 303(d) impaired water listings and priority status for assignment of total maximum daily load (TMDL) requirements. The Section 303(d) and TMDL assessments involve prioritizing waters on the basis of impaired water quality and the necessity for assigning quantitative pollutant load restrictions. These data are submitted to the USEPA for final review and approval. The most recent 303(d) list for California (including the San Diego Region) covers the period of 2004-2006, and was approved by the USEPA in June 2007 (SWRCB 2007). This list identifies over 100 individual impaired waters for the San Diego Region (including numerous creeks, surface reservoirs, and coastal water segments), with 46 associated pollutant/stressor categories. The seven hydrologic units identified above that are affected by the proposed plan include a number of the listed water bodies and pollutants/stressors. Many of the point and non-point flows within the study area drain directly or indirectly (i.e., via tributaries) into listed impaired water bodies, with these areas thus having the potential to adversely affect water quality. A proposed list is pending approval by the USEPA.

Water Quality Functions of Storm Water Facilities

The concrete and natural channels that serve as storm water facilities play a role with water quality as well as flood control. Four factors associated with storm water facilities determine the ability to remove water-borne pollutants: (1) sediment type and the capacity of the sediments for pollutant sorption/retention and its potential to settle or migrate as channel velocities increase, (2) vegetation composition and the capacity of the plant communities for pollutant sorption/retention, (3) surface water flow related to retention time and scouring potential, and (4) type of constituent in the water column and sediment that have varying pollutant retardation characteristics that vary under conditions. Each of these factors is discussed below.

Sediment Characteristics

The grain-size distribution characteristics of sediment present in the storm water system dictates the capacity of those sediments for pollutant sorption/retention, and its potential to settle or migrate as channel velocities increase. Sediments containing higher fractions by weight of clay particles possess a higher capacity for pollutant sorption/retention than coarse grained sand and gravels mixtures. Fine-grained sediments, particularly non-cohesive silts have low shear strength and are subject to scouring during storm events that can carry pollutants back into the water column. In addition to grain size distribution, the organic content of sediments also influences pollutant sorption/retention. Similar to the charged surface of clay particles that favor pollutant sorption/retention, organic materials in sediment also increase these characteristics.

Table 4.8-3 presents a summary of the sediment characteristics and associated pollutant capacity. This rating system for sediment pollutant removal capacity is used as part of the water quality assessment process and model. The site-specific sediment characteristics for each maintenance project are assessed through field and laboratory measurements, and a pollutant removal capacity

assigned based on these results. The sediment rating is then used in the model to determine the potential for sediment to adsorb and retain pollutants and whether impacted sediment has the potential to migrate back into the water column during storm flows between maintenance activities.

Table 4.8-3 POLLUTANT REMOVAL CAPACITY OF SEDIMENT	
Pollutant Removal Capacity	Sediment Characteristics
Nominal	<ul style="list-style-type: none"> • Concrete or other impermeable substrate • No sand and/or fines, organic carbon, detritus, and/or nutrient source
Low	<ul style="list-style-type: none"> • Sand and cobble substrate • No visible deposition of fines, organic carbon, and/or detritus • pH < 6 or > 8 • Redox: +100 mV
Moderate	<ul style="list-style-type: none"> • Less than 50 percent sand • Some visible deposition of fines, organic carbon, and/or detritus • Neutral pH (6.0 to 8.5) • Redox: -100 to +100 mV
High	<ul style="list-style-type: none"> • Less than 25 percent sand • Visible deposition of fines and other solids • Neutral pH (6.0 to 8.5) • Redox: < -100 mV

Vegetation Pollutant Removal Characteristics

Within a wetland, metals, pesticides, and other hydrophobic constituents in storm water are potentially transferred from the water column by flow modification (i.e., sedimentation and deposition), sorption, retention, and/or infiltration. Potential transformations (i.e., removal) of these chemical classes within the wetland systems include volatilization, photolysis, hydrolysis, precipitation, cation exchange reactions, and biotransformation. Additional mechanisms of nutrient (nitrogen and phosphorus) removal in these wetland systems include both bacterial transformations and physio-chemical processing including adsorption, absorption, precipitation, and sedimentation. The type of plant and sediment community/system present in the storm water facilities will have a direct influence on the effectiveness of the facility to remove pollutants from urban runoff.

Table 4.8-4 presents the vegetative characteristics and the associated potential pollutant removal capacity. Desirable plant traits for pollutant removal include rapid growth, high tissue nutrient content, and capability to attain a high standing crop. Absorption through the root systems of vegetation associated with the bottom of storm water facilities offers a second way that storm water facilities can remove urban pollutants. This process is commonly referred to as biofiltration. As indicated in Table 4.8-4 vegetation that consists of at least 75 percent cover of submerged and emergent wetland (e.g. freshwater marsh) exhibits the greatest capacity to remove pollutants.

The site-specific vegetative characteristics for each storm water facility can be assessed through field measurements, and a pollutant removal capacity assigned based on these results. The vegetative characteristic rating can then be used to determine the potential for the plant community to adsorb and retain pollutants. The capacity of the plant and sediment community to adsorb and retain pollutants is also a function of retention time. Pollutant uptake occurs when flows and velocities are low enough to allow for sufficient retention time. As velocities increase during storm events, retention times decrease and the capacity of the system to adsorb and retain pollutants is significantly reduced. The storm water facilities are not designed to retain storm flows, but rather convey them to reduce flooding.

Table 4.8-4 POLLUTANT REMOVAL CAPACITY OF VEGETATION	
Pollutant Removal Capacity	Vegetative Characteristics
Nominal	<ul style="list-style-type: none"> • No visible vegetation in wet areas
Low	<ul style="list-style-type: none"> • Young growth of new inhabitants • Woody and terrestrial species present • Minimal wetland species (submerged and/or emergent macrophytes) • Low surface area coverage and density
Moderate	<ul style="list-style-type: none"> • Mature population near carrying capacity >50 percent coverage of wet areas • Both submerged and emergent wetland species
High	<ul style="list-style-type: none"> • Young life-stage and population >75 percent coverage of wet areas Both submerged and emergent wetland species • Wetland species that reproduce through tubers and/or rhizomes

Absorption through the root systems of channel vegetation requires prolonged exposure (often in excess of 24 hours) to provide sufficient time for the roots to absorb pollutants. This occurs during low flow, dry weather flows as well as short duration and intensity storm flows.

Therefore, dry and wet weather conditions need to be considered in determining the potential capacity of an existing plant and sediment system to adsorb and retain pollutants due to changes in retention times as flows and velocities increase during storm events.

Vegetation can also act as a pollutant source when they die off or are dislodged during high flow conditions and transported downstream along with the pollutants which they have absorbed, transformed or absorbed.

Surface Water Flow Impact to Retention Time and Scour Potential

The ability of plants and sediment to capture pollutants varies greatly with the flow characteristics of each facility. Typically, surface flow ranges from dry weather (low flow) to wet weather (high flow) conditions. As discussed previously, low flow conditions, during dry weather, enhances the pollutant capturing capacity of plants and sediment because it allows for longer exposure time for adsorption and absorption. High flow conditions, during wet weather, are not generally conducive to the pollutant removal process because of the high quantities and velocities associated with high flows. In addition to greatly diminishing the capacity of plants and sediments to capture pollutants, high flows may often dislodge plant and sediment material where pollutants have been previously sequestered. In this event, pollutants would be transported back into the water column and into downstream areas. The characteristics of the sediment and plants along with the anticipated flow conditions all play key roles in determining the potential impacts to water quality for maintenance activities. The ability of different flows to facilitate removal of pollutants is illustrated in Table 4.8-5.

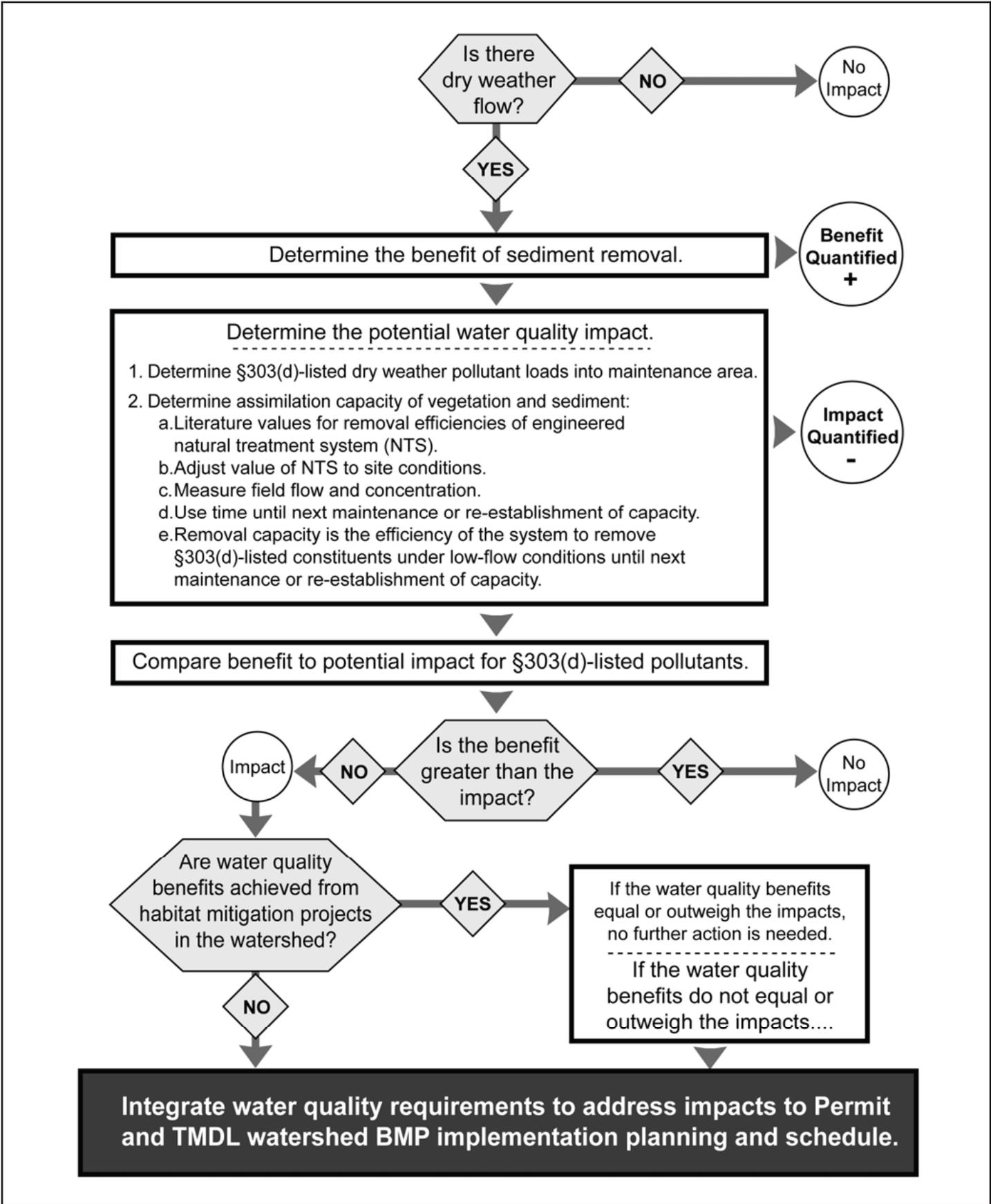
Table 4.8-5 POLLUTANT REMOVAL CAPACITY OF SURFACE FLOW	
Pollutant Removal Capacity	Surface Flow Characteristics
Nominal	<ul style="list-style-type: none"> • No visible surface water
Low	<ul style="list-style-type: none"> • Very deep (> 2 ft) or very shallow (< 0.5 ft) • Fast flowing and channeling • No deposition of fines • Redox: > +100 mV
Moderate	<ul style="list-style-type: none"> • Shallow (0.5 to 1 ft) • Moderate and variable flow depending on volume inputs • Observable HRT, some deposition of fines • Redox: -100 to +100 mV
High	<ul style="list-style-type: none"> • Moderate water depth (1 to 2 ft) • Slow flow with a significant HRT (> 1 h) • Deposition of fines • Redox: < -100 mV

The site-specific flow characteristics for each storm water facility are determined through field measurements, and in consideration of sediment characteristics, are used to assess the scouring potential of the sediment under anticipated storm conditions. Should the sediment contain pollutants of concerns, as determined from sediment sampling and analysis, and possess a scouring velocity that is expected to be reached during storm events predicted over the maintenance period, the removal of these sediments provide a benefit. The benefit is achieved by the removal of impacted sediments from the system that would have otherwise been released back into the water column during storm events. Furthermore, flow characteristics can be used to assess the capacity of the plant and sediment community to adsorb and retain pollutants which is a function of retention time. Pollutant uptake occurs when flows and velocities are low enough to allow for sufficient retention time. As velocities increase during storm events, retention times decrease and the capacity of the system to adsorb and retain pollutants is significantly reduced. The capacity of the plant and sediment system to adsorb and retain pollutants is therefore limited. In determining the loss of capacity from maintenance activities, impacts are based on the pollutant removal capacity limited to low flows during dry weather and small low intensity storms.

Type of Constituents in the Water Column and Sediment

The determination of sorption/retention capacity of plant and sediment systems is also dependant on the type of constituents and their concentration in surface water and sediment. Specific plant and sediment uptake and retention characteristics vary greatly between constituents, and therefore, require a pollutant-specific approach to determining impacts and benefits. The water quality assessment process and model include site-specific sediment and dry weather flow water quality sampling and analysis prior to maintenance activities serve as a basis for determining potential water quality impacts.

The inter-relationship of vegetation, sediment and surface flow conditions is illustrated in the Figure 4.8-1. This figure presents a typical timeline for a typical natural storm water facility that includes both dry and wet weather flow conditions. During dry weather flows and low storm flows, sediment typically drops out of channel flows and accumulates over time, depending on channel configuration and scouring velocities reached by storm events between maintenance periods. During this sediment accumulation, constituents bound to these sediments also accumulate, and the sediment acts as a pollutant reservoir or sink. Overtime, where conditions allow, various vegetative communities may be established that include plants that may uptake certain constituents such as nutrients depending on the plant type and concentration. This requires sufficient detention time under low flow conditions to allow these transfers and transformations to occur. However, plants also go through cycles of die-off and re-growth that may release constituents back into the channel flows. Furthermore, during high flow wet weather conditions, sediment containing adsorbed constituents can be transported downstream when scouring velocities are reached.



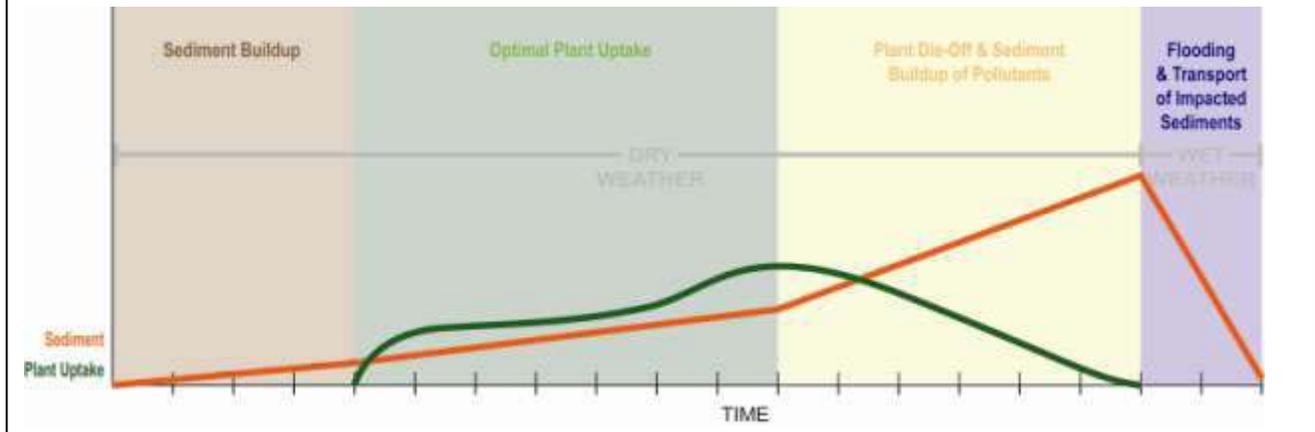
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Water Quality Impact Methodology

CITY OF SAN DIEGO MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM

Figure 4.8-2

Figure 4.8-1
INTERRELATIONSHIP OF VEGETATION, SEDIMENT AND SURFACE FLOW



Regulatory Framework

Maintenance activities conducted under the Master Program would be subject to a number of regulatory requirements related to water quality. The principal sources for these requirements include the CWA, the State Porter-Cologne Water Quality Act (Porter-Cologne Act), the San Diego RWQCB Basin Plan, and City grading and storm water standards, as outlined below.

Clean Water Act Standards

The 1972 CWA established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants to waters of the U.S. from industrial, commercial, institutional, and other point sources. Amendments to the CWA in 1987 established a framework for regulating urban storm water runoff and other non-point source pollutants. Specific NPDES requirements that may be applicable to the proposed maintenance activities are described below.

General Construction Activity Permit

Conformance with the Construction Activity Permit is required prior to disturbance exceeding one acre. This permit is issued by the SWQCB under an agreement with the USEPA. Specific conformance requirements include implementing a Storm Water Pollution Prevention Plan (SWPPP) and an associated monitoring program as well as a Storm Water Sampling and Analysis Strategy (SWSAS) for applicable projects (i.e., those discharging directly into waters impaired due to sedimentation, or involving potential discharge of non-visible pollutants that may exceed water quality objectives). These plans identify detailed measures to prevent and control the off-site discharge of pollutants in storm water runoff. Specific pollution control measures typically involve the use of best available technology economically achievable (BAT)

and/or best conventional pollutant control technology (BCT) levels of treatment, with these requirements implemented through BMPs. While site-specific BMPs can vary with conditions such as proposed grading parameters, slope and soil characteristics, detailed guidance for construction-related BMPs is provided in the Construction Permit text and the City Municipal Code *Land Development Manual-Storm Water Standards*, as well as additional sources including the *Storm Water Best Management Practices Handbooks*, *EPA Nationwide Menu of Best Management Practices for Storm Water Phase II*, and the California Department of Transportation (Caltrans) *Storm Water Quality Handbooks*.

General Groundwater Extraction Permits

Conformance with the noted groundwater permits is required by the RWQCB prior to disposal of extracted groundwater that is tributary to San Diego Bay (Groundwater Permit I), or waters other than San Diego Bay (Groundwater Permit II). For Groundwater Permit I, all discharges of extracted groundwater are subject to the specific numeric and narrative discharge criteria identified in the permit text and the RWQCB Basin Plan (as described below), including standards related to petroleum compounds, organic compounds, metals, toxic pollutants, suspended and settleable solids, and solvents. Requirements under Groundwater Permit II are applicable to discharge activities which either: (1) involve more than 100,000 gallons per day (gpd) of discharge; or (2) include pollutants that would exceed applicable discharge requirements, including the Basin Plan water quality and beneficial use objectives described below. Compliance with these standards typically involves using BMPs for a number of physical and/or chemical parameters, such as (depending on site-specific conditions) erosion/sedimentation controls and testing/treatment of extracted groundwater prior to disposal.

Municipal Storm Water Permit

The Municipal Storm Water Permit identifies waste discharge requirements for urban runoff related to applicable new development, redevelopment and existing development sites under the jurisdiction of co-permittees (including the City). The intent of these requirements is to protect environmentally sensitive areas and provide conformance with applicable water quality standards, including the CWA and the RWQCB Basin Plan (as outlined below). Identified requirements involve using a number of planning, design, operation, treatment, and enforcement measures to reduce pollutant discharges from individual development projects (and the municipal storm water system as a whole) to the maximum extent practicable (MEP). Specifically, these measures include: (1) using jurisdictional planning efforts (such as discretionary general plan approvals) to provide water quality protection; (2) requiring coordination between individual jurisdictions to provide watershed-based water quality protection; (3) implementing applicable low impact development, site design, source control, and volume- or flow-based (as defined in the permit text) treatment control BMPs to avoid, reduce, and/or mitigate effects including increased erosion and sedimentation, hydromodification,¹ and the discharge of pollutants in urban runoff; and (4) using appropriate education/outreach,

¹Hydromodification is defined in the Municipal Permit as the change in natural watershed hydrologic processes and runoff characteristics (e.g., infiltration and overland flow) caused by urbanization or other land use changes that result in increased stream flows, sediment transport, and morphological changes in the channels receiving the runoff.

monitoring, reporting, and enforcement efforts to ensure proper implementation, documentation, and (as appropriate) modification of permit requirements.

The need to address hydromodification and its influence on water quality is included in the San Diego Regional Water Board Order R9-2007-001, Provision D.1.g of California Regional Water Quality Control Board San Diego Region Order R9-2007-0001, which requires the San Diego Storm Water co-permittees to implement a Hydromodification Management Plan (HMP) "...to manage increases in runoff discharge rates and durations from all Priority Development Projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force."

To address this permit condition, the co-permittees, represented by the County of San Diego, hired a consultant team and proceeded with developing an HMP that meets the intent of the Permit Order. The permit requires the co-permittees to develop an HMP for all Priority Development Projects (PDP), with certain exemptions. The HMP must develop standards to control flows within the geomorphically-significant flow range. Supporting analyses must be based on continuous hydrologic simulation modeling.

As required by Permit Order No. R9-2007-0001, the City of San Diego incorporated the approved HMP into its local Standard Urban Storm Water Mitigation Plan (SUSMP) and implemented the HMP for all applicable PDPs by January 14, 2011.

Pursuant to the described Municipal Storm Water Permit requirements, the City (along with other applicable co-permittees) developed the SUSMP to address storm water quality issues, and adopted the related Storm Water Standards Manual. These documents provide (among other things) direction for applicants to determine if and how they are subject to City storm water and related Municipal Storm Water Permit standards, and identify requirements for the inclusion of permanent BMPs to provide regulatory conformance for applicable projects. The current City Storm Water Standards were most recently updated in March 2008 to specifically address interim requirements under the 2007 Municipal Permit.

The Municipal Storm Water Permit also requires co-permittees to fund and implement Urban Runoff Management Plans (URMPs) to document the specific runoff management measures and programs proposed to comply with the Municipal Permit requirements. Specifically, such measures would ensure that pollutant discharges in urban runoff are reduced to the MEP, and that such discharges would not cause or contribute to a violation of applicable water quality standards. The URMPs involve evaluations conducted on an individual jurisdictional basis (JURMPs), on a multi-jurisdictional watershed-based approach (WURMPs), and on a multi-jurisdictional regional basis (RURMP). Pursuant to these requirements, the City has prepared a JURMP and participated in the development of several WURMPs and the RURMP that encompass portions of the Program study area, with additional information provided below under the discussion of City Standards.

Urban Runoff Management Programs

As discussed above under CWA Standards, the NPDES Municipal Permit requires co-permittees to prepare and implement URMPs based on JURMP, WURMP, and RURMP considerations. Pursuant to these requirements the City adopted a JURMP, with the overall goal of this plan to “[r]educe the amount of pollutants carried by urban runoff.” To this end, the City JURMP provides detailed direction on topics such as:

- Ensuring that discharges from municipal urban runoff conveyance systems do not cause or contribute to a violation of water quality standards;
- Effectively prohibiting non-urban runoff discharges; and
- Reducing the discharge of pollutants from urban runoff conveyance systems to the MEP through efforts such as education and enforcement.

Detailed implementation activities for each program area listed above are contained in the JURMP, with individual City departments responsible for performing those tasks that are applicable and necessary to be in compliance with the Municipal Permit and related City standards. Specifically, this includes efforts such as appropriate staff training, monitoring/reporting, performing self-assessments, and modifying programs and activities as necessary.

The City has participated in and co-authored WURMPs for a number of applicable watersheds, including the San Dieguito, Peñasquitos, San Diego River, Mission Bay and La Jolla, San Diego Bay, and Tijuana River watersheds. All of these plans address similar issues as the described JURMP, but are focused on a watershed-based approach that extends across jurisdictional boundaries and entails coordination and cooperation between the various managing agencies.

The City also has participated in and co-authored a RURMP to address similar issues described in the JURMP that are regional in nature and more efficiently addressed at the regional level through collaboration with all co-permittees subject to the Municipal Permit.

City of San Diego Storm Water-Related Construction and Development Requirements

Municipal Code

Pursuant to the City Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code 43.03 et seq.), all new development in the City is required to comply with the storm water pollution prevention measures identified in Section 142.0146 (grading), and Section 142.0220 (storm water runoff control and drainage) of the Land Development Code. These measures require that development actions prevent erosion, sedimentation, and pollutant discharge to the MEP. Both temporary (construction) and permanent erosion, sedimentation, and water pollution control measures are required to be implemented to the satisfaction of the City, including efforts such as erosion prevention; sediment control; phased grading; BMP selection and operation; and monitoring, maintenance, and (as necessary) modification of implemented measures. The referenced Storm Water Standards Manual provides background information on storm water regulations and the relationship between City, state, and federal standards, and also gives comprehensive direction for maintaining conformance with all applicable storm water

requirements. Specifically, the Storm Water Standards Manual identifies procedures for determining applicable storm water requirements, preparing and submitting appropriate plans and technical materials, selecting pertinent short- (construction) and long-term BMPs, and identifying and implementing monitoring and maintenance requirements for BMPs and related programs.

Storm Water Standards Manual

Per requirements in the NPDES Municipal Permit, a Model SUSMP was collectively developed by the Municipal Permit co-permittees to address post-construction urban runoff pollution from new development and redevelopment projects that fall under “priority project” categories. The primary goal of the Model SUSMP is to develop and implement practicable policies to ensure that urbanization does not increase the urban runoff flow rates, velocities, or pollutant loads from a project site. This goal may be achieved through site-specific controls and/or drainage area-based or shared structural treatment controls. The Model SUSMP was submitted to and approved by the RWQCB and contains BMPs that must be used for certain designated project types to achieve this goal. The NPDES Municipal Permit also required the co-permittees to adopt the Model SUSMP requirements into their own regulations, called Local SUSMPs.

The City of San Diego adopted the Storm Water Standards Manual in 2002, to fulfill the Local SUSMP requirements. In accordance with the Storm Water Standards Manual, the City of San Diego reviews and approves the SUSMP project plan(s) as part of the approval process for discretionary projects, and prior to issuing permits for ministerial projects. To allow flexibility in meeting SUSMP design standards, structural treatment control BMPs may be located on or off site, used singly or in combination, or shared by multiple developments, provided certain conditions are met.

All new development and significant redevelopment projects that fall into one of the various “priority project” categories are subject to these SUSMP requirements (e.g., residential, commercial, or hillside developments that exceed established criteria for size or extent). In the instance where a project feature, such as a parking lot, falls into a priority project category, the entire project is subject to the associated SUSMP requirements. The majority of the established priority project categories pertains, to urban development and would not apply to the types of activities anticipated under the proposed plan. Two of the noted priority project categories do encompass non-urban development, however, including hillside development and projects that discharge to environmentally sensitive lands.

In addition to the priority project categories indicated above, the City has established standard permanent storm water requirements that apply to projects involving any of the following conditions:

- New impervious areas such as rooftops, roads, parking lots, driveways, paths, and sidewalks;
- New pervious landscape areas and irrigation systems;
- Permanent structures within 100 feet of any natural water bodies;
- Trash storage areas;

- Liquid or solid material loading and unloading areas;
- Vehicle or equipment fueling, washing, or maintenance area;
- A General NPDES Permit for Storm Water Discharges Associated with Industrial Activities (except construction);
- Commercial or industrial waste handling or storage, excluding typical office or household waste;
- Any grading or ground disturbance during construction; and
- Any new storm drains, or alterations to existing storm drains.

Projects involving one or more discretionary actions and including any of the above improvements or activities are subject to the previously described requirements of the City Storm Water Standards Manual. Depending on the nature, location, and characteristics of the proposed project/activities, various BMPs are available to address associated concerns, including site design, source control, and treatment control measures. Appropriate BMPs are identified on a project-by-project basis, as identified on project plans and specifications submitted in conjunction with the application for the necessary discretionary approval(s).

RWQCB Basin Plan Requirements

The Porter-Cologne Act and the CWA require that Water Quality Control Plans be prepared for the nine state-designated hydrologic basins in California. Basin Plans guide the conservation and enhancement of water resources and establish beneficial uses of inland surface waters, tidal prisms, harbors, and groundwater basins for each of the nine regions within the state. The San Diego RWQCB Basin Plan establishes a number of beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are generally defined in the Basin Plan as “the uses of water necessary for the survival or well being of man, plus plants and wildlife.” Identified beneficial uses include categories such as municipal, industrial, agricultural, recreational, and biological resource applications, with such uses identified for individual hydrologic designations and/or receiving waters in the Basin Plan. Water quality objectives identified in the Basin Plan are based on established beneficial uses, and are defined as “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses.” Water quality objectives for individual surface and groundwater resources can include both narrative requirements and specific numeric objectives. Narrative objectives typically include quantitative and/or qualitative standards for identified pollutants, as well as general anti-degradation requirements. In addition to the beneficial use and water quality objective criteria described above, the Basin Plan also identifies implementation programs to protect beneficial uses, establishes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan, and incorporates all applicable State and Regional Board plans and policies by reference.

In concert with the described Basin Plan policies and directives, the San Diego RWQCB regulates waste discharge and reclaimed water use to minimize and control adverse effects on the quality and beneficial uses of surface and groundwater. To this end, the RWQCB issues permits, (i.e., waste discharge requirements and master reclamation permits), which require that waste and reclaimed water not be discharged in a manner that would cause a violation of applicable water quality objectives or adversely affect identified beneficial uses.

4.8.2 Impacts

Significance Criteria

According to the City's Significance Determination Thresholds (2011), impacts to water quality would be significant if the project would:

- Grade, brush, or grub more than one acre of land, especially into slopes over a 25 percent grade, and would drain into any water body or stream (except in limited cases, projects which would disturb over five acres of land would have a significant impact);
- Result in loss of vegetation on slopes (e.g., brush management measures); and/or
- Substantially degrade water quality in a manner that could adversely affect human health/safety or biological resources due to increased sediment loads during site grading and construction as well as urban runoff pollution during the life of the project.

In addition, impacts to water quality would be significant if the project would:

- Diminish the capacity of the maintained facility to retain specific pollutants that exceed or are within 25 percent of a concentration standard established by the San Diego Basin Plan for the water body segment in which the maintenance would occur.

Analysis of Impacts

Issue 1: Would the Master Program increase pollutant discharges, during or following maintenance, including downstream sedimentation, to receiving waters, including to water quality sensitive areas or to impaired water bodies on the Clean Water Act §303(d) list?

Maintenance is expected to have both positive and negative impacts on water quality. Negative impacts on water quality would be associated with erosion and sedimentation during and following excavation activities, diminished pollutant removal capacity, introduction of hazardous materials related to the operation of mechanized equipment use (e.g., fuels, etc.), trash generation related to maintenance operations/crews, and the dewatering of dredged material.

Negative impacts due to the removal of sediment and plant communities during maintenance include reductions of the capacity of these systems to retain pollutants present in dry weather and low storm flows. The sorption and retention capacity of the plant and sediment system depends on the characteristics of the sediment and plants, flow conditions and type of pollutants and concentrations in the water column and sediments. Retention time plays a key role in the pollutant removal capacity of the system that decreases as flow and velocities increase during storm events. Therefore the capacity of the plant and sediment communities is dynamic and the factors of sediment and plant type, flow conditions and pollutant types all need to be considered.

On the other hand, maintenance may have a positive effect on water quality. Removal of contaminated sediment during maintenance would have a positive impact by removing pollutants that have bonded to these sediments. High velocities and volumes of runoff could transport these pollutants into downstream areas. In general, velocities of greater than five cubic feet per second (cfs) are considered capable of re-suspending sediments. Thus, where these velocities could occur, the removal of accumulated polluted sediment could benefit downstream areas. Excavation of contaminated sediments would also facilitate onsite removal of surface water pollutants by exposing fresh sediments with an increased potential to bond with pollutants. Similarly, removal of plant material which has maximized its potential to retain and adsorb pollutants would also improve the water quality function of natural drainages by removing the pollutants sequestered by those plants, and allowing the plant material to be renewed along with its retention and adsorption capacity.

Erosion and Sedimentation

Potentially significant erosion and sedimentation impacts could be associated with the following maintenance activities: (1) use of mechanized equipment to remove accumulated sediments; (2) construction of ramps, and/or staging areas; (3) replacement of riprap in channel banks or energy dissipation structures; and/or (4) construction of water bypass facilities.

No significant erosion and sedimentation impacts would be associated with non-mechanical maintenance activities or the use of mechanized equipment in concrete-lined facilities. Non-mechanical activities would focus on above-ground vegetation, leaving the root system to continue to hold soil. Mechanized equipment used in concrete-lined facilities would not entail any grading or disturbance of previously undisturbed or compacted earthen areas which could promote erosion.

The removal of sediment and vegetation with mechanical equipment would not be expected to result in a significant increase in erosion and downstream sedimentation due to the characteristics of areas where mechanical maintenance is expected to be conducted and due to implementation of protocols defined in the Master Program.

With respect to channel characteristics, the areas being proposed for maintenance have historically been areas of deposition due to the upstream sediment supply and the channel hydraulic characteristics. Following maintenance, these areas would be expected to continue to be depositional areas, as they have been for years. Because these areas would continue to be depositional, ongoing and regular future maintenance will be required once the channel capacities are again restricted by the accumulation of sediment and the growth of vegetation within the channels. In addition, the removal of the sediment and vegetation would result in a larger cross sectional area in the channel, which would result in a decrease in channel velocities in these areas which would decrease erosion potential.

In addition to the inherent factors discussed above, the Master Program includes specific maintenance protocols designed to minimize erosion and sedimentation resulting from maintenance activities. In particular, the Master Plan requires installation of check dams when recommended by the IHHA. The check dams would be constructed by placing 3-foot steel poles

in the channel bed. Chain link fencing (1-2 feet high) would be installed between these poles at the channel flowline. The exact height of these structures would be based on the specific channel characteristics to avoid restricting the ability of the channel to convey floodwater.

Check dams would promote the accumulation of sediment upstream of the check dam, which would give added protection against downstream sedimentation, by resulting in slower velocities upstream and promoting deposition. Once vegetation begins to establish within the maintenance area and its natural function in limiting erosion begins to return, the fencing would be removed to ensure that the structures do not cause additional flooding. The chain link fence would be removed, but the posts would be retained. Leaving the posts in place offers two benefits. First, it would allow the posts to be used to monitor sediment accumulation depth to assess future maintenance needs. Second, it would allow them to be reused to create check dams during future maintenance events and reduce the impact of installing the posts repeatedly to create check dams.

Implementation of BMPs outside the channel related to access and staging would minimize erosion and sediment from areas outside the channel.

The replacement of riprap could facilitate erosion through the use of mechanized equipment to “prepare” these areas for rock placement. The erosion potential would be limited to the brief period between the removal of the existing riprap and the riprap replacement. As riprap replacement would not occur during high rainfall events, the erosion risk would be minimal. Potential water bypass activities would involve the redirection and/or discharge of water, with associated potential to cause erosion and sedimentation in graded or destabilized areas (e.g., vegetation removal sites). Riprap or other techniques would be used to reduce the discharge velocity of redirected water to prevent downstream erosion.

Reduced Pollutant Removal Capacity

The removal of vegetation and sediment as a result of maintenance may decrease the capacity of the storm water facilities to adsorb and retain pollutants. The impact on maintenance depends on a number of key factors. As discussed earlier, facilities which exhibit the following characteristics have the highest value for pollutant removal: (1) dense coverage of freshwater marsh vegetation, (2) high levels of fines (clay particles) and organic material in the substrate, and (3) moderate water depth and slow flow rates. As a consequence, maintenance in these facilities would have the highest potential for impact. Impacts to facilities that are unvegetated, have an impermeable substrate (e.g. concrete) and have no visible surface waters would not be significant because these facilities have only nominal pollutant removal capacity. Maintenance in facilities having characteristics which fall between these two extreme conditions would have varying degrees of impact on pollutant removal capacity.

Construction-related Hazardous Materials/Trash Generation

Maintenance activities involving the use of mechanized equipment would result in the introduction of hazardous materials such as vehicle fuels/lubricants. The accidental discharge of construction-related hazardous materials or trash into the drainage system could potentially result

in significant impacts to local and downstream receiving waters, particularly materials such as petroleum compounds that are potentially toxic to aquatic species in low concentrations. However, implementation of the protocols contained in the Master Program would serve to reduce potential impacts to below a level of significance. These protocols include the following:

- Minimize the amount of hazardous materials stored on site, and restrict storage/use locations to areas at least 50 feet from storm drains and surface waters;
- Store construction-related trash in areas at least 50 feet from storm drains and surface waters, and implement regular (at least weekly) removal of trash for disposal at an approved site;
- Cover and/or enclose storage facilities for hazardous materials and trash, and maintain accurate and up-to-date written hazardous material inventories;
- Store hazardous materials off the ground surface (e.g., on pallets) and in their original containers, with the legibility of labels protected. Replace damaged labels;
- Use berms, ditches, and/or impervious liners (or other applicable methods) in material storage and vehicle/equipment maintenance and fueling areas to provide a containment volume of 1.5 times the volume of stored/used materials and prevent discharge in the event of a spill;
- Place warning/information signs in areas of hazardous material use or storage to identify the types of materials present, as well as applicable use restrictions and containment/clean-up procedures;
- Mark storm drains (or other appropriate locations) to discourage inappropriate hazardous material or trash disposal;
- Provide training for applicable employees in the proper use, handling, and disposal of hazardous materials as well as appropriate action to take in the event of a spill;
- Store readily accessible absorbent and clean-up materials in applicable locations such as hazardous material storage and vehicle/equipment maintenance areas;
- Post regulatory agency telephone numbers and a summary guide of clean-up procedures in a conspicuous location at or near the job site trailer; and
- Monitor and maintain hazardous material use/storage facilities and operations to ensure proper working order on at least a monthly basis.

Net Effects of Maintenance on Pollutant Removal Capacity

As discussed earlier, maintenance of storm water facilities is expected to have both positive and negative impacts with respect to water quality. Thus, the impact of maintenance within a specific facility would be a function of the relationship of the negative and positive aspects associated with that facility. When the negative effects outweigh the positive effects, with respect to a water pollutant that is over and/or within 25 percent of the relevant water quality objective, the maintenance activity would have a significant impact on water quality. When the positive effects outweigh or are equal to the negative effects on such pollutants, the maintenance activity would not result in a significant water quality impact.

In order to estimate the impact of maintenance upon water quality, Weston developed a methodology to assess the net impact. This methodology is described in Appendix A of Appendix F of this EIR and summarized below.

Methodology

The methodology for determining impacts and benefits related to storm water facility maintenance is depicted in Figure 4.8-2. The basic procedure for weighing benefits versus impacts involves a comparison on the average annual pollutant load removal capacity of the storm water facility in the pre- and post-maintenance condition over the anticipated period between maintenance activities (normally 3-5 years). The benefit side of the equation would include the amount of pollutants removed in the form of sediment and plant material removed in the course of maintenance. However, this benefit would only be included in the calculations if the expected flow rates would be anticipated to potentially re-suspend sediments and/or plant material containing pollutants and transport them downstream. As stated earlier, flow velocities in excess of 5 cfs are generally considered likely to re-suspend sediment and plant material.

The methodology is based on assessing the ability of the primary features of storm water facilities that have a water quality function. As discussed earlier, these features are related to surface flow, vegetation and sediment characteristics. Due to the minimal amount of published information regarding the ability of natural drainages to remove pollutants, Weston used published information on engineered wetlands and applied conversion factors to mimic natural systems. As discussed in Appendix F, the primary source of engineered wetland literature is associated with wastewater treatment.

The ability of a storm water facility to remove pollutants in surface water would be based on the following three characteristics: vegetation, sediment and surface flow. These characteristics are described in Tables 4.8-3, 4.8-4 and 4.8-5, respectively. Each of these factors would be assigned a score of 0 to 3; zero would be applied to nominal category described in these tables while a score of 3 would be assigned to the high category. Thus, channels covered by dense wetland vegetation would be rated highest while concrete channels would be rated lowest. With respect to sediments, those consisting primarily of fines and organic carbon, very little sand with high solids deposition and neutral pH would be rated highest because they have the greatest potential to adsorb pollutants; concrete channels would be rated lowest. With respect to surface water, storm water facilities where the water depth is between one to two feet where velocities are non-scouring would be rated highest for capacity to remove pollutants while facilities exhibiting no surface water would be rated lowest.

The total pollutant removal score for a storm water facility would be derived by adding the ratings from all three factors. An overall score of 0 to 2 would be considered a poor. Scores between 3 and 4 would be considered fair. Scores of between 5 and 7 would be considered fair. Scores of 8-9 would be considered optimum recovery conditions.

The ability of storm water facilities to recover to their pre-maintenance condition would also be taken into account because the impact/benefit methodology is calculated over the maintenance intervals. Thus, storm water facilities which recover favorable pollutant retention characteristics most quickly would experience less impact than those where vegetation and sediment may be slow to become re-established. As with the impact analysis, the focus of the evaluation regarding recovery potential would be based on vegetation, sediment and surface water

characteristics. As with the impact analysis, each factor would be assigned a score of 0 to 3. The highest score would be assigned when the vegetation is expected to recover within one year. The lowest score for sediment would be given when sufficient re-deposition of sediment is expected to occur within one year of maintenance. With respect to surface flow recovery, the highest score would be assigned to facilities where the depth of water would return to levels greater than one-foot within one year.

As with the pollutant removal capacity, the total recovery score for a maintained storm water facility would be derived by adding the ratings from all three factors. An overall score of 0 to 2 would be considered a poor. Scores between 3 and 4 would be considered fair. Scores of between 5 and 7 would be considered fair. Scores of 8-9 would be considered optimum recovery conditions.

If the comparison of benefits versus impacts indicates that the impact on a water pollutant from the proposed maintenance would exceed the benefits with respect to a specific pollutant, maintenance would be determined to have a significant impact with respect to pollutant if the existing level for that pollutant exceeds or is within 25 percent of the standard established by the San Diego Basin Plan.

Case Studies

In order to illustrate the methodology described above and the general effect on water pollutant removal capacity of storm water facilities, Weston used the methodology on a segment of Chollas Creek (Map No. 93) and Alvarado Creek (Map No. 64). These two segments were selected because they were required to undergo emergency maintenance. Thus, the two segments afforded an opportunity to apply the methodology to a “real life” situation. The results of these two case studies are presented in detail in Appendix F and summarized below.

As indicated earlier, the work began with an estimation of the capacity of each of these two segments to remove pollutants based on vegetation, sediment and surface flow characteristics. In addition, the work estimated the capacity of the storm water systems after maintenance to remove pollutants over the anticipated interval between maintenance events. The results of this evaluation process are presented in Tables 4.8-6 and 4.8-7.

Alvarado Creek

As illustrated in Table 4.8-6, the following pollutants are identified as exceeding the Basin Plan standard in the watershed: total nitrogen, total phosphorus, manganese and selenium. A comparison of the removal capacity of Alvarado Creek with that of Chollas Creek also reveals that this segment of Alvarado Creek is quite effective in removing nitrogen and phosphorus due to the large amount of the freshwater marsh occurring within the channel.

Using total nitrogen as an example, maintenance would substantially reduce the ability of this segment of Alvarado Creek to remove this pollutant by approximately 83 percent the first year after maintenance, and then by 66 percent and 50 percent for the second and third year,

respectively. Similarly, the removal capacity for pollutants which exceed the Basin Plan standard was similarly reduced by more than 80 percent during the first year.

On the basis of the calculations performed by Weston, which included the amount of pollutants removed with the sediment during maintenance, it was concluded that the maintenance in this channel would not have a significant impact on the capacity of this segment to remove all of the pollutants which already exceed the established Basin Plan standards. Although maintenance also reduced the capacity of the segment to remove other pollutants, the impact is not considered significant because these pollutants are not within 25 percent of the Basin Plan standard.

Chollas Creek

As illustrated in Table 4.8-7, the following pollutants are identified as exceeding the Basin standard in the watershed: total nitrogen, total phosphorus, diazinon, total copper, total lead, total manganese and total zinc. A comparison with Table 4.8-6 also reveals that this segment is not as effective in removing pollutants as Alvarado Creek. This reduced capacity is related to the fact that the cobble bottom is not as effective in capturing pollutants and the freshwater marsh is not as well developed.

As with the segment in Alvarado Creek, a review of Table 4.8-7 indicates that the removal capacity for pollutants which exceed the Basin Plan standard is generally reduced by more than 80 percent during the first year.

On the basis of the calculations performed by Weston, which included the amount of pollutants removed with the sediment during maintenance, it was concluded that the maintenance in this channel would not have a significant impact on the capacity of this segment to remove all of the pollutants which already exceed the established Basin standards. Although maintenance also reduced the capacity of the segment to remove other pollutants, the impact is not considered significant because these pollutants are not within 25 percent of the Basin Plan standard.

In general, the evaluation shows that the ability of natural drainages to remove water pollutants is diminished by maintenance. As would be expected, the reduction is greatest during the initial years after maintenance, and improves over time as vegetation re-establishes. However, after 3-5 years, when maintenance may be required again, the removal capacity may not have returned to the pre-maintenance condition. Thus, continued maintenance is anticipated to diminish the ability of natural drainages to remove pollutants.

Depending on the nature of the vegetation, surface flow and sediment character similar impacts could occur in other segments as a result of maintenance. The actual degree of impact would be determined during IWQAs that are required to be conducted by the Master Program. These assessments would employ the methodology discussed earlier to determine the degree of impact and the amount and nature of mitigation measures to offset significant water quality impacts associated with maintenance.

Table 4.8-6 EFFECT OF MAINTENANCE ON WATER POLLUTANT REMOVAL BEFORE AND AFTER MAINTENANCE ON ALVARDO CREEK (MAP NO. 64)								
	Basin Standard	Measured Concentration	Estimated Annual Load Removal Capacity Over Three-year Period (pounds)				Net Change in Treatment Capacity over 3 year Period	Significant Impact?
			Without Maintenance	With Maintenance				
			Total Treatment Capacity of Vegetation and Sediment	Treatment Capacity of Vegetation and Sediment	Pollutants Removed with Excavated Sediment ¹	Total Treatment Capacity		
Nitrate as N	10 mg/L	1.04 mg/L	846	516.8	37.2	554	-292	No
Nitrite as N	1 mg/L	0.010 mg/L	8.1	4.94	0.46	5.4	-2.7	No
Total Kjeidahl Nitrogen	n/a	1.10mg/L	193.7	118	5,929	6,047	5,853.3	No
Total N	1 mg/L	2.15 mg/L	1,048	640.5	5,966.2	6,606.7	5,558.7	No
Total Phosphorus	0.10 mg/L	0.93 mg/L	576	352	1,234	1,586	1010	No
Total Suspended Solids	58 mg/L	9.0 mg/L	8,525	5,210	190,932	196,142	187,617	No
Chlorpyrifos		ND	n/a	0	0	0	0	No
Diazinon	0.05 µ/L	0.02g/L	0.0121	0.0074	0	0.0074	-0.0047	No
Malathion		ND	n/a	0	0	0	0	No
Total Antimony	0.006 mg/L	0.0005 mg/L	0.4	0.23	3.40	3.63	3.23	No
Arsenic	0.05 mg/L	0.0060 mg/L	4.6	2	25	27	22.4	No
Total Cadmium	0.005 mg/L	0.1080 mg/L	82.6	50.49	1.40	51.89	-30.71	No

**Table 4.8-6 (cont.)
 EFFECT OF MAINTENANCE ON WATER POLLUTANT REMOVAL BEFORE AND AFTER MAINTENANCE ON
 ALVARDO CREEK (MAP NO. 64)**

	Basin Standard	Measured Concentration	Estimated Annual Load Removal Capacity Over Three-year Period (pounds)				Net Change in Treatment Capacity over 3 year Period	Significant Impact?
			Without Maintenance	With Maintenance				
			Total Treatment Capacity of Vegetation and Sediment	Treatment Capacity of Vegetation and Sediment	Pollutants Removed with Excavated Sediment ¹	Total Treatment Capacity		
Total Chromium	0.05 mg/L	ND	n/a	0.5	34	34.5	34.5	No
Total Copper	1 mg/L	0.0040 mg/L	1.9	1	104	105	103.1	No
Total Lead	0.15 mg/L	0.0009 mg/L	0.7	0.2	74	74.2	73.5	No
Total Manganese	0.05mg/L	0.0363 mg/L	27.8	17	1,591	1,608	1,580.2	No
Total Nickel	0.1 mg/L	1.0010 mg/L	0.8	1	23	24	23.2	No
Total Selenium	0.005 mg/L	0.0020 mg/L	1.5	0.93	1.54	2.47	-97	No
Total Zinc	5 mg/L	0.0110 mg/L	7.1	4	706	710	702.9	No

 Indicates that constituent exceeds or is within 25 percent of the Basin standard in watershed.

¹ Based on the removal of 1,200 cubic yards of sediment during maintenance.

**Table 4.8-7
 EFFECT OF MAINTENANCE ON WATER POLLUTANT REMOVAL BEFORE AND AFTER MAINTENANCE
 ON CHOLLAS CREEK (MAP NO. 93)**

	Basin Standard	Measured Concentration	Estimated Annual Load Removal Capacity Over Five-year Period (pounds/year)				Net Change in Treatment Capacity over 5 year Period	Significant Impact?
			Without Maintenance	With Maintenance				
			Total Treatment Capacity of Vegetation and Sediment	Treatment Capacity of Vegetation and Sediment	Pollutants Removed with Excavated Sediment	Total Treatment Capacity		
Nitrate as N	10 mg/L	0.49 mg/L	456	257.81	1.19	259	-197	No
Nitrite as N	1 mg/L	.040 mg/L	37.2	21.12	0.48	21.6	-15.6	No
Total Kjeldahl Nitrogen	n/a	1.70 mg/L	342.1	194	455	649	112.9	No
Total N	1 mg/L	2.23 mg/L	835	473.2	456.5	929.7	94.7	No
Total Phosphorus	0.1 mg/L	0.43 mg/L	304.4	173	236	409	104.6	No
Total Suspended Solids	58 mg/L	14 mg/L	15,157	8,588	270,745	279,333	264,176	No
Chlorpyrifos		0.0046 µ/L	0.003	0.002	0	0.002	-0.001	No
Diazinon	0.045 µ/L	0.0047 µ/L	0.003	0.002	0	0.002	-0.001	No
Malathion		0.0048 µ/L	0.003	0.002	0	0.002	-0.001	No
Total Antimony	0.006 mg/L	0.0020 mg/L	1.75	0.99	0.57	1.56	-0.19	No
Arsenic	0.05 mg/L	0.0020 mg/L	1.75	0.99	5.71	6.70	4.95	No

	Basin Standard	Measured Concentration	Estimated Annual Load Removal Capacity Over Five-year Period (pounds/year)				Net Change in Treatment Capacity over 5 year Period	Significant Impact?
			Without Maintenance	With Maintenance				
			Total Treatment Capacity of Vegetation and Sediment	Treatment Capacity of Vegetation and Sediment	Pollutants Removed with Excavated Sediment	Total Treatment Capacity		
Total Cadmium	.005 mg/L	0.0620 mg/L	54.2	30.72	0.41	31.13	23.1	No
Total Chromium	.05 mg/l	ND	n/a	0	23	23	23	No
Total Copper	1 mg/L	0.0090 mg/L	4.9	3	33	36	31.1	No
Total Lead	0.154 mg/L	0.0009 mg/L	0.8	1	27	28	27.2	No
Total Manganese	0.05 mg/L	n/s	n/s	0	231	231	231	No
Total Nickel	0.1 mg/L	0.0050 mg/L	4.4	2.48	9.15	11.63	7.23	No
Total Selenium	.005 mg/L	0.0008 mg/L	0.7	0.39	0.30	0.69	-0.01	No
Total Zinc	5 mg/L	0.0310 mg/L	23	13	189	202	179	No

 Indicates that constituent exceeds or is within 25 percent of the Basin standard in watershed.

¹ Based on the removal of 1,100 cubic yards of sediment during maintenance.

Significance of Impact

The removal of vegetation and sediment as a result of maintenance may decrease the capacity of the storm water facilities to retain pollutants. The impact of maintenance depends on a number of key factors. As discussed earlier, facilities which exhibit the following characteristics have the highest value for pollutant removal: (1) dense coverage of freshwater marsh vegetation, (2) high levels of fines (clay particles) and organic material in the substrate, and (3) moderate water depth and slow flow rates.

Removal of vegetation as a result of maintenance may result in a significant impact on the capacity of natural drainage systems to adsorb and retain pollutants within the water column potentially allowing greater quantities of pollutants to reach impaired water bodies downstream of these facilities. Although removal of contaminated sediment would, in some cases, result in an overall benefit to the overall water quality within a specific watershed; in most cases, maintenance would be expected to have an overall negative impact with respect to pollutants which already are approaching or exceed standards established for the Basin Plan and are readily absorbed by plants that are present in the stormwater system. Whenever the negative impacts of maintenance outweigh the positive effects, based on the methodology identified earlier, the impact of maintenance with respect to water quality would be significant. However, with incorporation of the relevant mitigation and BMP measures identified below, impacts to water quality would be reduced to less than significant levels.

Mitigation Measures, Monitoring and Reporting

Mitigation for water quality impacts would be achieved through a variety of techniques which would range for watershed-wide measures to localized measures. Watershed-wide mitigation would be achieved through implementation of the City's Integrated Water Quality Plan. Watershed-wide mitigation would also be achieved as a result of enhanced water pollutant capture resulting from the enhancement, restoration and/or creation of wetland habitat required to offset biological impacts. Localized mitigation could be achieved by implementing short-term measures until the storm water facility's pollutant retention capability have re-established. Localized methods include street sweeping, catch basins, dry detention basins, check dams to increase retention time, and filtration devices for suspended solids.

The following table identifies mitigation measures which are available to offset losses in pollutant removal capacity resulting from maintenance. The final selection and design of mitigation measures will depend on the unique characteristics associated with each maintenance activity. In order to estimate the appropriate mitigation, the following general process would be followed: (1) the type(s) of mitigation measures and/or BMPs available would be identified, (2) the approximate tributary watershed that each mitigation measure and BMP can treat would be estimated, (3) the average annual pollutant load removal for each mitigation measure and BMP would be estimated, and (4) the total number of mitigation measures and/or BMPs required to remove the pollutant loads required to offset an impact would be estimated. Completion of the IWQA and the IHHA will serve to define the appropriate mitigation strategy for individual maintenance activities. With implementation of the specified mitigation, protocols and/or BMPs, maintenance impacts to water quality would be reduced to below a level of significance.

Mitigation Measure	Pollutant Type						
	Bacteria	Metals	Nutrients	Pesticides	Sediment	TDS/ Chloride Sulfates	Trash
Remove kelp on beaches					●	●	
Sweep streets	●	●	●	●	●	●	●
Retrofit residential landscaping to reduce runoff	●	●	●		●		
Install artificial turf	●	●	●	●	●		●
Install inlet devices on storm drains		●	●		●		
Replace impermeable surfaces with permeable surfaces		●	●		●		●
Install modular storm water filtration systems		●	●	●	●	●	●
Install storm water retention basins		●	●	●	●	●	●
Install catch basin media filters		●	●		●	●	●
Create vegetated swales	●	●	●	●	●	●	●
Restore wetlands	●	●	●	●	●	●	●
Install check dams		●			●		●

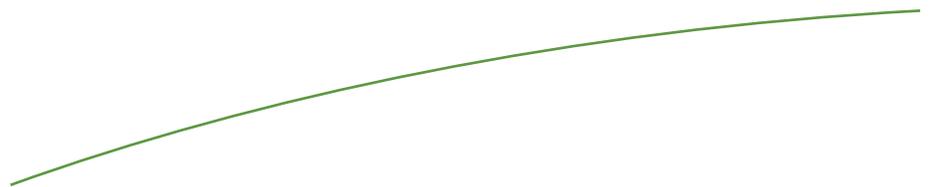
Mitigation Measure 4.8.1: Prior to commencement of any activity within a specific annual maintenance program, a qualified water quality specialist shall prepare an IWQA for each area proposed to be maintained. The IWQA shall be prepared in accordance with the specifications included in the Master Program. If the IWQA indicates that maintenance would impact a water pollutant where the existing level for that pollutant exceeds, or is within 25 percent of, the standard established by the San Diego Basin Plan, mitigation measures identified in Table 4.8-8 shall be incorporated into the IMP to reduce the impact to within the established standard for that pollutant.

Mitigation Measure 4.8.2: No maintenance activities within a proposed annual maintenance program shall be initiated before the City's ADD Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IWQAs including proposed mitigation and BMPs for each of the proposed activities. In their review, the ADD Environmental Designee and agencies shall also confirm that the appropriate maintenance protocols have been incorporated into each IMP.

Mitigation Measure 4.8.3: Prior to commencing any activity where the IWQA indicates significant water quality impacts may occur, a pre-maintenance meeting shall be held on site with following in attendance: City's SWD, MM, MMC, and MC. A qualified water quality specialist shall also be present. At this meeting, the water quality specialist shall identify and discuss mitigation measures, protocols and BMPs identified in the IWQA that must be carried out during maintenance. After the meeting, the water quality specialist shall provide DSD with a letter indicating that the applicable mitigation measures, protocols and BMPs identified in the IWQA have been appropriately implemented.



Chapter 5.0
GROWTH INDUCEMENT



CHAPTER 5.0 – GROWTH INDUCEMENT

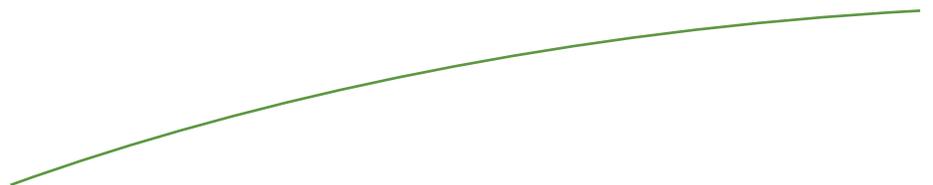
The purpose of this section is to discuss the ways in which the proposed Master Program could foster economic or population growth, or construction of additional housing. A project's growth inducing effects are generally considered indirect impacts because they do not directly result from the completion of a project, or a series of projects under a program; rather, they could result from its existence.

The proposed Master Program would not have the potential to induce growth. The maintenance program would maintain storm water facilities that already exist within the City. No new facilities would be created. The proposed removal of vegetation and sediment from storm water facilities would restore rather than increase their capacity to carry floodwaters. As such, no growth inducing impacts, direct or indirect, are anticipated to occur as a result of the implementation of the proposed project.

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Chapter 6.0
CUMULATIVE IMPACTS



CHAPTER 6.0 – CUMULATIVE IMPACTS

This section addresses the potential for impacts from the proposed Master Program to combine with impacts from future development within the study area, and result in cumulative impacts to the environment. Section 15355 of the State CEQA Guidelines defines “cumulative impacts” as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Section 15130(b) of the State CEQA Guidelines indicates that the discussion of cumulative impacts needs to include either of the following elements:

- (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

The cumulative impacts discussion is based on the adopted Final PEIR for the City General Plan (2008) that evaluated region-wide conditions pertaining to cumulative impacts. In accordance with Section 15130(b)(1)(B), the General Plan Final PEIR’s analysis of the cumulative effects relied on the regional growth projections provided by the San Diego Association of Governments’ (SANDAG) *2030 Regional Growth Forecast Update* (Regional Growth Forecast). The Regional Growth Forecast provides estimates and forecasts of employment, population, and housing for the period between 2004 and 2030. The Regional Growth Forecast and Final PEIR for the General Plan are available for review at the City Planning and Community Investment Department.

According to the 2030 forecast, the population of the City is projected to increase by 361,110 persons or approximately 28 percent between 2004 and 2030 to approximately 1,656,257 persons (Table 6-1). The population of San Diego County (i.e., the unincorporated areas of the County and all of the incorporated cities) is projected to increase by 971,739 persons or approximately 32 percent between 2004 and 2030 to 3,984,753 persons. The number of housing units is projected to increase by approximately 24 percent within the City and 26 percent within the County during the 2004-2030 period.

In the time that has passed since the General Plan Update EIR was certified in 2008, the City of San Diego has approved 19 amendments to the various Community Plans which implement the City’s General Plan (See Table 6-2). Although these amendments occurred after the General

Plan Update PEIR was certified, they do not substantially affect the basis upon which the cumulative analysis was based. The primary reason for this conclusion is the fact that none of the amendments identified in Table 6-2 require an amendment to the General Plan. This is indicative of the fact that the land uses associated with the Community Plan amendments are consistent with the land use designations established by the General Plan Update. Thus, approval of these amendments would not change the land use assumptions upon which the housing and population forecasts for 2030 were based and upon which the cumulative analysis in the General Plan Update PEIR relied.

Furthermore, the cumulative impacts associated with the proposed Master Program are not sensitive to changes which are associated with the Community Plan amendments. Impacts related to the proposed Master Program are primarily related to physical changes and the related impacts on biological and historical resources. Impacts of future development on biological and historical resources are a function of the physical area of disturbance rather than the nature of development. For example, the impacts to biological and historical resources would be essentially the same whether the resource is impacted by a residential or commercial development. Similarly, changing the density of residential development would not change the disturbance footprint.

Table 6-1 PROJECTIONS FOR THE CITY AND SAN DIEGO COUNTY (2004 AND 2030)				
Jurisdiction	Total Population		Total Housing Units	
	2004	2030	2004	2030
City of San Diego	1,295,147	1,656,257	420,266	610,249
San Diego County	3,013,014	3,984,753	1,095,077	1,383,803

Source: SANDAG 2030 Regional Growth Forecast Update, September 2006

Table 6-2 COMMUNITY PLAN AMENDMENTS APPROVED AFTER CERTIFICATION OF THE GENERAL PLAN UPDATE PEIR			
Project Name	Community Plan Area	Description	Council Approval Date
Scripps Mercy Hospital	Uptown	Redesignate 2.19 acres from Open Space to Institutional (Hospital), 0.40 from High Residential (44-74 du/ac) to Open Space and 0.04 acres from Institutional (Hospital) to Open Space.	5/20/08
Linda Vista/Clairemont Mesa Open Space	Linda Vista and Clairemont Mesa	Boundary adjustment to shift 6.64 acres from Clairemont Mesa to Linda Vista Community Plan, and redesignate property from School/Open Space to Open Space. Shift 0.93 acres in Linda	5/30/08

**Table 6-2
 COMMUNITY PLAN AMENDMENTS APPROVED AFTER CERTIFICATION OF
 THE GENERAL PLAN UPDATE PEIR**

Project Name	Community Plan Area	Description	Council Approval Date
		Vista to Clairemont Mesa and redesignate from Open Space to School.	
University Town Center	University City	Change development intensity from 1,061,000 sf of Regional Commercial to 1,811,409 sf of Regional Commercial and 250 multi-family dwelling units.	7/29/08
Torrey Hills Unit 19, Lots 1-4	Torrey Hills	Redesignate 13.26 acres from Industrial to Medium Density Residential (30-44 du/ac) and transfer 950 ADTs from TAZ 931 to TAZ 937.	9/16/08
Point Loma Townhomes	Peninsula	Redesignate 1.65 acres from Industrial (Fishing-Marine Related) to Commercial ¹	10/7/08
Quarry Falls	Mission Valley	Specific Plan for 230-acre mixed use development including 4,780 residential dus, 480,000 sf of commercial retail, 420,000 sf of commercial office, 17.5 acres of parks, open space, trails and an optional school site.	10/21/08
Archstone	Navajo	Removal of mobile home overlay on 10.2 acres and retention of Medium High density residential.	11/18/08
Palladium	Kearny Mesa	Redesignate 7.5 acres from Industrial Business Park to High Density Residential (44-74 du/ac).	11/18/08
SEDC 5 th Amendment	Southeastern SD/Skyline PH	Redesignate Imperial Avenue corridor to allow mixed use development and increase the maximum allowable residential density from 30 to 74 du/ac, increase residential capacity by 1,766 dus, reduce industrial acreage by 8.3 acres, and reduce commercial acreage by 6 acres. Redesignate portions of Skyline-Paradise Hills CP to increase residential units by 90 units and reduce commercial acreage by 1.2 acres.	4/28/09
Black Mountain Ranch Subarea	Black Mountain Ranch	Reconfigure street patterns, adjust land use in northern village, convert golf course to Open Space, and allow Senior Housing on Hotel site.	5/19/09

Table 6-2 COMMUNITY PLAN AMENDMENTS APPROVED AFTER CERTIFICATION OF THE GENERAL PLAN UPDATE PEIR			
Project Name	Community Plan Area	Description	Council Approval Date
Plan Amendment			
Alvarado Apartments	College Area	Redesignate 9.99 acres from Institutional (Hospital and Related Medical Offices) to High Residential Density (45-75 du/ac).	7/28/09
Erma Road	Scripps Miramar Ranch	Redesignate 3.92 acres from Commercial (Professional Office) to High Medium Density Residential (15-29).	11/10/09
Aztec Court Apartments	College Area	Redesignate 0.19 acres from Low Medium Density Residential (10-15 du/ac) to High Residential Density (45-75 du/ac).	1/26/10
Community Wellness Campus	Rancho Penasquitos	Redesignate 4.45 acres from Religious Facilities to General Institutional – Healthcare Services.	2/23/10
Hazard Center	Mission Valley	Increase residential dwelling units from 145 to 618 and decrease commercial space from 205,510 sf to 185,000 sf.	5/18/10
Mission Brewery Mixed Use	Midway/PHC	Redesignate 3.12 acres from Commercial-Transportation to Multiple Use (up to 29 du/ac).	7/12/10
Vista Lane Villas	San Ysidro	Redesignate 2.88 acres from Low Density Residential (5-10 du/ac) to Low-Medium Residential Density (10-15 du/ac).	11/30/10
Blackshaw Lane Villas	San Ysidro	Redesignate 0.94 acres from Low Residential Density (5-10 du/ac) to Low-Medium Residential Density (10-15 du/ac).	11/30/10
Gables Carmel Valley ¹	Carmel Valley	Redesignate 3.17 acres from Open Space to Low Density Residential (15-29 du/ac).	3/29/11

¹ Pending City Council approval of California Coastal Commission modifications.
 Source: CP&IP, May 2011

In addition, the cumulative analysis includes specific impacts that have resulted from emergency maintenance of storm water facilities in the past for which no mitigation has occurred, as identified in Table 6-3. Emergency maintenance conducted in 2010 is not included because mitigation for these maintenance activities is being addressed under a separate permitting process.

Date of Activity	Wetland Impact By Watershed (acres)				
	San Diego	Tijuana	Pueblo	Peñasquitos	Total
October-December 2004	0.99	0.0	0.01	0.0	1.00
January-March 2005	0.82	0.77	0.0	0.0	1.59
June 2005	0.0	0.0	0.0	0.12	0.12
October-November 2005	0.0	0.0	0.0	0.13	0.13
March 2006	0.0	0.0	0.0	0.0	0.0
Total	1.81	0.77	0.01	0.25	2.84

¹ Excludes emergency maintenance conducted in 2010 which included mitigation for wetland impacts, as required by permitting agencies.

Source: Daniel Lottermoser, 2008

Cumulative impacts are analyzed in light of the significance criteria presented in Chapter 4.0, Environmental Analysis, of this PEIR. Implementation of the mitigation measures identified in Chapter 4.0 would reduce the incremental contribution of the proposed maintenance activities to cumulative impacts to the maximum extent feasible.

6.1 AESTHETICS/NEIGHBORHOOD CHARACTER

General Plan PEIR

The General Plan PEIR concluded that future development within the City would result in a cumulative impact that may not be able to be reduced to below a level of significance. Although the General Plan includes policies designed to reduce the visual impacts of future development, the infill and redevelopment that would likely occur under the General Plan may result in significant project-level impacts associated with visual resources and neighborhood character. Project-level impacts related to substantial blocking of public views from designated open space areas or scenic highways, or to any significant visual landmarks or scenic vistas (e.g., mountains, bays, rivers, and ocean), substantial changes in topography, or to ground surface relief features, and negative and substantial alteration of the existing character of the plan area, would constitute significant and unavoidable cumulative visual impacts.

Master Program

As discussed in Subchapter 4.2, Aesthetics/Neighborhood Character, the Master Program would involve vegetation and debris removal and/or dredging, and possibly water diversion and dewatering. Well-developed vegetation associated with storm water facilities may represent an visual aesthetic resource as well as contribute to the character of the neighborhood. The initial removal of this vegetation by maintenance activities would contribute to the cumulatively significant aesthetic and neighborhood character impacts identified in the General Plan PEIR. Furthermore, subsequent vegetation removal would be necessary to accomplish the flood control

goals for affected facilities. Thus, the proposed maintenance could result in a significant cumulative impact with respect to aesthetics/neighborhood character. Because vegetation removal would need to occur periodically in the future to maintain the flood control aspects of these facilities, the cumulative impact is considered cumulatively significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to aesthetics and neighborhood character.

6.2 BIOLOGICAL RESOURCES

General Plan PEIR

The MSCP, MHCP, and the Multiple Habitat Conservation and Open Space Program collectively contribute to the conservation of vegetation communities and species in the City. As the City develops based on projected future population growth and housing units, however, biological resources not adequately protected by an adopted species or habitat conservation program or other regulations may be adversely affected. In addition, for some projects, it is possible that adherence to regulations protecting biological resources may not adequately avoid or reduce incremental impacts.

The City has a number of plans, policies, and regulations (e.g., MSCP and ESL) which require individual projects to mitigate for their impacts on biological resources. In accordance with these plans, policies, and regulations, mitigation also would be carried out to offset impacts associated with the proposed maintenance of storm water facilities, as discussed in Subchapter 4.3, Biological Resources.

The degree of future impacts as well as the applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program level of analysis. However, it is reasonable to assume that incremental biological resources impacts may occur which, when viewed in connection with regional impacts to unprotected species, habitats, and other resources, would represent a significant, unavoidable cumulative impact on biological resources.

Master Program

As discussed in Subchapter 4.3, the proposed project would result in the loss of wetland and upland habitat as well as associated sensitive plants and animals. In addition, as noted, impacts to wetlands have also occurred as a result of past maintenance activities conducted under emergency conditions. Although measures are proposed to mitigate for the impacts of past and future maintenance on these resources, as concluded in the General Plan PEIR, the proposed project would still contribute to the City-wide loss of biological resources anticipated by the General Plan PEIR. Thus, the cumulative impact to biological resources associated with the proposed project is considered cumulatively significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to biological resources.

6.3 HISTORICAL RESOURCES

General Plan PEIR

Development that is expected to occur through the implementation of the General Plan could involve ground-disturbing activities and substantial alteration, relocation, or demolition of historic buildings, structures, objects, landscapes, and sites that would significantly impact historic and archaeological resources and/or prehistoric human remains. In general, however, implementation of General Plan policies and compliance with federal, state, and local regulations would preclude impacts to historic and archaeological resources and prehistoric human remains. Nonetheless, for some projects, it is possible that adherence to regulations may not adequately avoid or reduce incremental impacts. Because the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program level of analysis, incremental impacts related to historic and archaeological resources and prehistoric human remains, when viewed in connection with historic resources impacts elsewhere in the City, are considered cumulatively significant and unavoidable.

Master Program

As discussed in Subchapter 4.4, Historical Resources, the proposed project could result in impacts to pre-historic resources located along or within natural drainage courses. Historic resources are not expected to occur within the storm water facilities. Although measures are proposed to mitigate for the impacts to prehistoric resources encountered during maintenance, as concluded in the General Plan PEIR, the degree to which these measures would be able to reduce cultural resource impacts is unknown. Thus, the cumulative impact to cultural resources associated with the proposed project is considered cumulatively significant and unavoidable. This conclusion is consistent with the conclusion drawn in the City's General Plan PEIR relative to cultural resources.

6.4 HYDROLOGY

General Plan PEIR

Future development associated with projected population growth in the City would result in increased impervious surfaces within the City's watersheds, which would result in hydrologic impacts associated with absorption rates, drainage patterns, or rates of surface runoff. The introduction of new or expanded impermeable surface areas, such as paved highways, streets, rooftops, and parking lots, can potentially affect absorption rates, drainage patterns, and/or the rate of surface runoff. In general, implementation of General Plan policies and compliance with federal, state, and local regulations would mitigate hydrological impacts. However, some instances are anticipated where project-specific mitigation measures may not be sufficient to reduce a project's impact to below a level of significance. Thus, the General Plan PEIR concluded that cumulative hydrology impacts would be significant and unavoidable.

Master Program

Overall, the proposed project would not change the existing drainage patterns or substantially increase impermeable surface area. While maintenance would remove obstructions which are constricting the ability of drainage facilities to transport floodwaters through existing drainages, it would not change drainage patterns. Modification of the underlying drainage configuration would not be allowed under the proposed Master Program.

As a result of the absence of change in drainage patterns and storm water runoff volume, unlike implementation of the City's General Plan, implementation of the Master Program would not result in a significant cumulative hydrology impact.

6.5 LAND USE

General Plan PEIR

The General Plan PEIR concluded that cumulative development within the City would not lead to combined physical environmental effects associated with land use impacts that result in a greater cumulative impact than would occur for each specific location of a potential land use impact, with the potential exception of impacts related to land use incompatibilities. Protective measures within adopted regional, state, and federal environmental plans, including applicable habitat conservation plans and compliance with the mandatory policies and regulations of state or federal agencies were found to ensure that physical changes to the environment associated with the incremental effect of the General Plan on adopted regional, state, and federal environmental plans, policies and regulations would not be cumulatively significant when viewed in connection with physical changes to the environment associated future regional development in surrounding jurisdictions. A substantial portion of future development within both the City and elsewhere in the County, however, is likely to consist of infill and redevelopment, which typically involves increased exposure of sensitive receptors to incompatible land uses, such as restaurants, bars, and night clubs, industrial uses, traffic noise, and other adverse physical impacts.

The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA, as well as analysis of those projects for consistency with the goals, policies, and recommendations of the General Plan. In general, implementation of General Plan policies and compliance with federal, state, and local regulations were determined to minimize adverse physical changes to the environment associated with land use impacts. For some projects, however, it was considered possible that adherence to regulations may not adequately avoid or reduce incremental impacts. Because the degree of future impacts and applicability, feasibility, and success of future mitigation measures could not be adequately known for each specific future project at this program level of analysis, incremental adverse physical changes to the environment associated with land use impacts, when viewed in connection with such adverse physical changes associated with land use impacts elsewhere in the City were considered cumulatively significant and unavoidable.

Master Program

Maintenance activities occurring in accordance with the Master Program would not result in significant cumulative land use impacts. Any land use compatibility issues (e.g. dust or noise) would be temporary and, generally, not last more than four weeks over a 3- to 5-year period. Once completed, the storm water facilities would not generate any activities which would conflict with surrounding land uses. In fact, improved flood control resulting from maintenance would reduce the underlying conflict between storm water facilities and adjacent development that occurs when these facilities are not adequately maintain and result in flooding of adjacent development. As a result of the absence of change in activities associated with the storm water facilities and reduced flooding resulting from maintenance, unlike implementation of the City's General Plan, implementation of the Master Program would not result in a significant cumulative land use impact.

Mitigation implemented as part of individual maintenance activities would include measures that assure conformance with the MSCP as well as ESL.

6.6 NOISE

General Plan PEIR

As the City develops in response to projected population growth, future residential, commercial, industrial, transportation, and public facilities projects would not only result in short-term construction-related noise impacts, but the operation of these projects would cumulatively increase ambient noise levels in the City. The City has existing ordinances that dictate periods of construction to avoid significant impacts. Cumulative noise impacts would generally be associated with improvements to major regional transportation corridors and stationary sources such as industrial land uses. Sensitive receptors within the noise impact zone of major transportation corridors and significant stationary sources of noise could be exposed to noise levels in excess of applicable standards as a result.

Improvements to major regional transportation corridors that are anticipated to occur during implementation of the General Plan could increase the number of trucks and buses operating on regional freeways and arterials and the number of trains operating on regional rail lines, which would result in increased ambient noise levels along these transportation corridors. In addition, improvements in major transportation corridors could increase the number of trucks, buses, and trains within such corridors, which generate more noise per vehicle than automobiles. Furthermore, there is a high propensity for infill and redevelopment near existing and planned transit facilities under the General Plan, which could decrease vehicular congestion and allow vehicular traffic on freeways and major arterials to move faster, potentially increasing the noise produced by vehicular traffic in certain corridors.

The addition of new stationary sources that are anticipated to occur during implementation of the General Plan could, when viewed in connection with new stationary sources elsewhere in the City, cumulatively expose sensitive receptors to elevated ambient noise levels. Thus, the

General Plan PEIR concluded that cumulative noise impacts would be significant and unavoidable.

Master Program

Cumulative noise impacts would occur if construction activities associated with nearby projects occur simultaneously with the proposed maintenance work included within the Master Program. During performance of maintenance tasks, the Master Program would contribute to cumulative noise impacts. Cumulative noise impacts would depend on the proximity of noise sensitive receptors to construction/maintenance projects in the area, as well as the timing of equipment use. As stated in Subchapter 4.6, Noise, mandatory compliance with the City's Noise Abatement and Control Ordinance would reduce maintenance noise impacts to less than significant levels. In light of the limitations imposed by the Noise Abatement and Control Ordinance and the unlikelihood of construction activities occurring around maintenance activities, implementation of the Master Program would not result in significant cumulative noise impacts.

6.7 PALEONTOLOGICAL RESOURCES

General Plan PEIR

As the City continues to develop in response to projected population growth, mass grading, underground parking areas, roadway construction and other activities associated with future development may result in the loss of unique paleontological resources or geologic formations with medium to high fossil bearing potential. In general, implementation of General Plan policies and compliance with federal, state, and local regulations would preclude incremental paleontological resources impacts. For some projects, however, it is possible that adherence to regulations may not adequately avoid or reduce incremental impacts.

Master Program

As discussed in Subchapter 4.7, Paleontological Resources, implementation of the proposed Master Program is considered to pose a low potential for impacts to paleontological resources. It is anticipated that maintenance activities would not penetrate areas which exhibit a moderate to high potential for significant fossil deposits. Excavation activities within storm water facilities would be limited to sediment removal and would not encroach into undisturbed geologic formations. However, impacts may still occur that would contribute to City-wide impacts. Thus, the project could have cumulatively significant impacts that would be unavoidable.

6.8 SOLID WASTE

General Plan PEIR

Implementation of the General Plan will result in new development and an associated increase in the amount of solid waste generated within the City. The City's landfills are facing storage deficiencies in the future and would require capacity improvements to serve the additional population anticipated with buildout under the City's General Plan. The majority of the solid

waste materials generated by maintenance are anticipated to be transported to the Miramar Landfill for disposal. According to the CIWMB website, as of April 18, 2008, the Miramar Landfill had a remaining capacity of approximately 87.76 million cubic yards of solid waste. It is anticipated that the Miramar Landfill will reach its maximum capacity by the year 2017. Although the City has an ongoing effort to encourage recycling, there are no reliable plans to expand the landfill capacity available to the City. Thus, future development within the City is expected to result in a cumulatively significant impact with respect to solid waste disposal which would be unavoidable.

Master Program

Storm water maintenance activities are anticipated to generate the following three primary types of materials requiring disposal: dredge spoil, vegetation, and rubbish. Dredge spoil would be comprised of sediment removed from the storm water facilities. This sediment is predominantly composed of soil materials but also contains urban runoff pollutants such as automobile by-products, and pesticides and herbicides associated with landscape maintenance. Vegetation would consist of groundcover, shrubs, and trees removed from storm water facilities. This vegetation may range from minimal groundcover to dense riparian woodland. Large areas of a highly invasive plant, known as arundo, or giant reed, also are anticipated to be removed in the course of channel maintenance or wetland mitigation. Rubbish is expected to be comprised of a variety of discarded items, including shopping carts, car batteries, furniture and automobile tires.

The Master Program includes the following maintenance protocols to minimize the amount of material transported to landfills for disposal:

- Compostable green waste material shall be taken to an approved composting facility, if available;
- Soil, sand, and silt shall be screened to remove waste debris and, wherever possible, re-used as fill material, aggregate, or other raw material usage; and
- Waste tires shall be separated and transported to an appropriate disposal facility. If more than nine tires are in a vehicle or waste bin at any one time, they shall be transported under a completed Comprehensive Trip Log (CTL) to document that the tires were taken to an appropriate disposal facility.

Although these protocols would be anticipated to reduce the impact of maintenance on landfill capacity, one of the major components of the vegetation expected to be removed during maintenance (giant reed) is not easily recycled due its high fibrous content. This, in combination with the uncertainty regarding the availability of suitable reuse sites for dredge material, results in the determination that the proposed maintenance activities would have a potentially significant impact on solid waste disposal. Furthermore, the City has limited control over the ability to recycle or reuse waste generated by storm water maintenance. Because the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program level of analysis, incremental impacts associated with solid waste, when viewed in connection with the increased regional demand for landfill capacity, are considered cumulatively significant and unavoidable.

6.9 WATER QUALITY

General Plan PEIR

Future development under the General Plan could generate pollution that adversely affects water quality. As discussed in Subsection 4.8, Water Quality, a number of pollutant sources are associated with urban areas including both point and non-point sources. Urban runoff typically includes pollutants such as total suspended solids, sediment, trash, pesticides, animal waste, heavy metals, bacteria and nutrients. These contaminants can adversely affect receiving and coastal waters, as well as associated plant and animal life, and human health and safety. As development occurs in accordance with the General Plan, potential sources of these urban pollutants will increase.

The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA, as well as analysis of those projects for consistency with the goals, policies and recommendations of the General Plan. In general, implementation of the above policies and compliance with federal, state, and local regulations would preclude incremental water quality impacts. However, the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program level of analysis. Therefore, the General Plan PEIR concluded that incremental water quality impacts would be considered cumulatively significant and unavoidable.

Master Program

As discussed in Subchapter 4.8, Water Quality, storm water facility maintenance is expected to have both positive and negative impacts on water quality. Negative impacts on water quality would be associated with erosion and sedimentation during and following excavation activities, diminished pollutant removal capacity, introduction of hazardous materials related to the operation of mechanized equipment use (e.g., fuels, etc.), trash generation related to maintenance operations/crews, and the dewatering of dredged material. On the other hand, maintenance may have a positive effect on water quality. Removal of polluted sediment and plant material during maintenance would have a positive impact by removing pollutants that have bonded to these sediments. The net effect of maintenance on water quality would be dependent on whether the loss of pollutant treatment capacity would be outweighed by the reduction in pollutants that would occur from excavation of polluted sediment and plant material.

In light of the fact that cumulatively, potentially unavoidable, significant impacts on water quality were identified in the General Plan PEIR, the Master Program could result in significant cumulative water quality impacts that may be unavoidable.

6.10 AIR QUALITY

General Plan PEIR

The San Diego Air Basin (SDAB) is currently designated as a nonattainment area with respect to state and federal standards for ozone, and state standards for PM10, and PM2.5. Future development associated with the projected population growth in the City would generate increased air pollutant emissions associated with construction activities, transportation, and stationary sources. Construction activities anticipated during the course of implementation of the General Plan could result in substantial emissions of PM10 and PM2.5. In addition, the high propensity for infill and redevelopment activities to occur in accordance with the General Plan could increase the volume of traffic flow at some intersections, which could potentially increase the number of vehicles that are idling at roadway intersections releasing emissions and causing localized concentrations of carbon monoxide or CO hot spots that can harm sensitive receptors near the affected intersection. Since CO hot spots involve concentration of CO and would not increase the total amount of CO in the SDAB, CO hot spots would not have greater cumulative impacts when considered together.

The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA, as well as analysis of those projects for consistency with the goals, policies and recommendations of the General Plan. In general, implementation of the above policies and compliance with federal, state, and local regulations would preclude incremental air quality impacts. However, for some projects it is possible that adherence to regulations may not adequately avoid or reduce incremental impacts. Thus, future development may result in significant, unavoidable cumulative impacts with respect to air quality.

Master Program

As discussed in Subchapter 8.2, Effects Found Not to be Significant, the proposed Master Program would generate nominal emissions for criteria pollutants but the levels would not exceed the thresholds for criteria pollutants. However, given the importance of air quality, the project would contribute to the cumulatively significant impacts identified in the General Plan EIR. Thus, the proposed project would have significant cumulative impacts with respect to air quality which would be unavoidable.

6.11 GREENHOUSE GAS EMISSIONS

General Plan PEIR

Population growth anticipated to occur during implementation of the City's General Plan is expected to result in increased emissions of GHG emissions, largely due to increased vehicle miles traveled as well as increased energy consumption and waste generation. By generating increased GHG emissions that contribute to global warming, development that occurs in accordance with the General Plan would incrementally contribute to the adverse economic, public health, natural resources, and other environmental impacts projected to occur in California and throughout the world as a result of global warming.

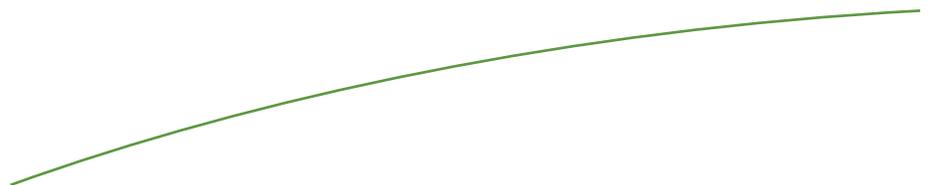
The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA, as well as analysis of those projects for consistency with the goals, policies and recommendations of the General Plan. In general, implementation of the above policies and compliance with federal, state, and local regulations would preclude incremental GHG emissions impacts. However, for some projects it is possible that adherence to regulations may not adequately avoid or reduce incremental impacts. Thus, future development may result in significant, unavoidable cumulative impacts with respect to GHG emissions.

Master Program

As discussed in Subchapter 8.2, Effects Found Not to be Significant, the proposed Master Program would generate nominal GHG emissions which would not exceed the 900-ton screening threshold established by the City. However, given the magnitude of the issues related to GHG emissions, the project would contribute to the cumulatively significant impacts identified in the General Plan EIR. Thus, the proposed project would have significant cumulative impacts with respect to GHG emissions which would be unavoidable.



Chapter 7.0
ALTERNATIVES



CHAPTER 7.0 - ALTERNATIVES

In accordance with Section 15126.6(a) of the State CEQA Guidelines, an EIR must describe “a range of reasonable alternatives to the project, or to the location of the project, which would reasonably attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project,” as well as “evaluate the comparative merits of the alternatives.” An EIR need not consider every conceivable alternative to the project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making.

As discussed in Chapter 3.0, Project Description, the primary objectives of the proposed project are as follows:

- Fulfill the mandate of Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk;
- Develop a comprehensive program that will govern the future maintenance of the City’s storm water system in an efficient, economic, environmentally and aesthetically acceptable manner for the protection of property and life, in accordance with Council Policy 800-04;
- Ensure implementation of Best Management Practices (BMPs) and maintenance protocols during maintenance activities to avoid and/or minimize effects to environmental resources, and incorporate the analysis of the operational and pollution prevention benefits of each proposed project; and
- Create an integrated comprehensive review process for annual maintenance activities that will facilitate authorizations from local, state and federal regulatory agencies.

Based on the analysis contained in Chapter 4.0, Environmental Analysis, and Chapter 6.0, Cumulative Impacts, the project would result in potentially significant impacts related to aesthetics/neighborhood character (cumulative), air quality (cumulative), biological resources (direct, indirect and cumulative), GHG emissions (cumulative), historical resources (direct and cumulative), land use (direct), paleontological resources (direct and cumulative), solid waste disposal (cumulative) and water quality (direct and cumulative). The alternatives identified in this analysis are intended to reduce or avoid these impacts of the project.

Based on the requirement that alternatives meet most of the basic objectives of the proposed project and reduce significant impacts associated with the proposed project, this EIR analyzes the following alternatives which would reduce the need for regular maintenance of storm water facilities. These alternatives include:

- Raising the channel banks by constructing walls or berms along the top of the channels;
- Diverting storm water in pipes around constrained segments;
- Widening channels to accommodate vegetation; and/or
- Reducing off-site runoff generation through use of low impact development measures.

Alternative locations are not considered given the nature of the proposed project. Proposed maintenance activities must occur within the channel segments included in the Master Program in

order to achieve the primary goal of protecting life and property from flooding. Conducting maintenance activities in other locations would not achieve this goal and would result in continued flooding of adjacent property.

In addition, as mandated by CEQA, the following discussion addresses two forms of a No Project alternative. The first, identified as the “No Project: No Maintenance Alternative”, assumes that no maintenance is performed within the storm water facilities. The second, referred to as the “No Project: Maintenance With Separate Permits Alternative”, assumes that maintenance would be carried out but under separate permits rather than a single master permit.

Based on the analysis which follows, the No Project: No Maintenance Alternative is considered the environmentally preferred alternative because it would eliminate all impacts associated with the proposed project. The Reducing Off-site Runoff Alternative would be the next environmentally preferred alternative but it is considered infeasible, as discussed below.

7.1 NO PROJECT: No Maintenance

7.1.1 Description

Under the No Maintenance Alternative, the City would not conduct any maintenance activities within the storm water system. Vegetation would grow unchecked within the channels and sediment would not be removed.

7.1.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

Under the No Maintenance Alternative, visual impacts associated with the maintenance of storm water facilities (i.e., clearing of vegetation) would not occur. Thus, no cumulative impacts to aesthetics/neighborhood character would occur.

Air Quality (Cumulative)

Under the No Maintenance Alternative, no emissions related to criteria pollutants would be generated. Thus, no cumulative air quality impacts would occur.

Biological Resources (Direct, Indirect and Cumulative)

Under the No Maintenance Alternative, sensitive biological resources including wetlands and rare and endangered plants and animals would not be impacted as the habitat within the storm water facilities would not be cleared. Thus, the No Maintenance Alternative would avoid the direct, indirect and cumulative impacts associated with the proposed project.

GHG Emissions (Cumulative)

Under the No Maintenance Alternative, no GHG emissions would be generated. Thus, no cumulative GHG emissions impacts would occur.

Historical Resources (Direct and Cumulative)

Because no maintenance activities would occur under this alternative, no direct or cumulative impacts to historical resources would occur, as opposed to the proposed Master Program, which could potentially cause significant impacts to such resources.

Land Use (Direct)

This alternative would be consistent with the goal of preserving natural drainage systems and would reflect the goals of the ESL Regulations to retain sensitive biological and cultural resources. However, it would conflict with Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk. It would also conflict with other goals of the General Plan and the applicable community plans and LCPs to protect life and property from flooding.

Equipment noise and dust impacts on adjacent development, associated with the proposed Master Program, would be avoided by the No Maintenance Alternative.

Paleontological Resources (Direct and Cumulative)

The potential for significant impacts to paleontological resources from implementation of the proposed Master Program would be avoided with the No Maintenance Alternative because no disturbance to geologic formations underlying the storm water facilities would be disturbed.

Solid Waste Disposal (Cumulative)

This alternative would eliminate the impact on solid waste disposal because it would eliminate waste material associated with maintenance activities (e.g., dredge spoil, vegetation, and rubbish). Thus, this alternative would not have a significant cumulative impact on solid waste disposal.

Water Quality (Direct and Cumulative)

Under the No Maintenance Alternative, potential impacts of the maintenance on water quality related to the loss of pollutant filtration by plants and sediment removed in the course of maintenance would be avoided. In addition, the potential for erosion and sedimentation resulting from the removal of vegetation would be avoided. In the long-term, the natural pollutant filtration value of the vegetation within the channels would be maintained under this alternative, as no vegetation would be removed. However, sediment buildup could cause runoff to circumvent native vegetation thereby reducing natural pollutant filtration and accumulating

adsorbed pollutants. In addition, the benefit associated with periodic removal of polluted sediment and plant material that would occur with maintenance would not occur with the No Maintenance Alternative.

Without storage or operation of equipment within storm water facilities, this alternative would avoid impacts related to the on-site use and (potentially) storage of hazardous materials such as vehicle fuels or lubricants. The accidental discharge of maintenance-related hazardous materials or trash into the storm water system during maintenance would also be eliminated.

7.1.3 Basis for Rejection

Although the No Maintenance Alternative would be the environmentally-preferred alternative because it would avoid significant environmental impacts related to the proposed project, the City rejected the alternative because it would not fulfill the basic objective to protect life and property from flooding, as mandated by the City Charter. The overgrowth within the storm water facilities that would occur from lack of regular maintenance would impede flood waters and cause flooding. The overgrowth within the storm water facilities that would occur from lack of regular maintenance would impede and alter the efficiency of the City's storm water facilities to convey storm water runoff and could result in flooding. On average, the City receives approximately 35 risk management claims related to flooding each year. The primary cause of flooding and damages to property cited in these claims are attributed to the lack of maintenance in facilities that have accumulated sediment, trash/debris, and vegetation. In addition, the City's costs associated with claims may remain constant or increase by precluding preventative maintenance of channels that would restore as-built or natural conveyance capacities. Overgrowth and sedimentation also may facilitate ponding of water within the channels and increase the risk of mosquito infestation and other vector problems. Additionally, accumulation of sediment may not only cause floodwaters to escape from the channels more frequently, prolonged flooding may cause the drainage patterns to change.

7.2 NO PROJECT: MAINTENANCE WITH SEPARATE PERMITS

7.2.1 Description

Section 15126.6(e)(3)(A) of the CEQA Guidelines requires that a no project alternative discuss what is reasonably expected to occur if the proposed project is not approved. If the proposed Master Program is not adopted, storm water facility maintenance would be expected to continue in the manner in which it has occurred in the past. Historically, the City has maintained storm water facilities in a much less systematic way than would occur with the proposed Master Program. The City generally conducted regular maintenance activities largely on an "as needed" basis based on a perceived need and/or citizen complaints. Unlike the Master Program's proposal to base maintenance requirements on the results of site-specific hydrology studies, the amount of maintenance conducted within individual segments was based primarily on the premise that all existing vegetation and accumulated sediment must be removed to achieve the desired capacity to convey floodwater. Also, no universal list of maintenance protocols would be followed by the City crews in the course of maintenance under separate permits.

For purposes of this analysis, the maintenance required to achieve the goal of reducing the risk to life and property from flooding is assumed to involve the same type and amount of maintenance as would occur with the proposed Master Program.

7.2.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

Similar to the proposed Master Program, the removal of mature trees in the course of maintenance under the Maintenance With Separate Permits Alternative would combine with impacts from other development to result in significant cumulative aesthetic/neighborhood character impacts City-wide.

Air Quality (Cumulative)

The amount of criteria pollutants generated by this alternative would be comparable to the proposed project. Thus, as with the proposed project, this alternative would result in cumulatively significant impacts with respect to air quality.

Biological Resources (Direct, Indirect and Cumulative)

Under the Maintenance With Separate Permits Alternative, the amount of biological resources impacted by maintenance of the storm water facilities would be comparable to maintenance pursuant to the Master Program. Thus, as with the proposed Master Program, this alternative would result in significant direct, indirect and cumulative impacts to sensitive biological resources.

GHG Emissions (Cumulative)

The amount of GHG emissions generated by this alternative would be comparable to the proposed project. Thus, as with the proposed project, this alternative would result in cumulatively significant impacts with respect to GHG emissions.

Historical Resources (Direct and Cumulative)

The potential for impacts to historical resources associated with storm water maintenance with separate permits would be the same as the proposed Master Program. Maintenance of storm water facilities with separate permits would pose the same potential threat to buried resources as the proposed Master Program. Thus, direct and cumulative impacts on historical resources, as with the proposed project, would be potentially significant.

Land Use (Direct)

As with the proposed project, removal of vegetation under the Maintenance With Separate Permits Alternative would result in potentially significant land use policy impacts due to the potential conflicts with the City's ESL Regulations. As with the proposed project, significant land use policy impacts with respect to ESL Regulations could also arise from noise impacts to

nesting/breeding sensitive birds. Lastly, as with the proposed project, the potential also exists that maintenance could impact historical resources which are protected by ESL Regulations.

Paleontological Resources (Direct and Cumulative)

As with the proposed project, maintenance with separate permits has the potential to have significant direct and cumulative impacts on paleontological resources.

Solid Waste Disposal (Cumulative)

As with the proposed project, this alternative would produce sediment and vegetation material that would require disposal at a City landfill. Given the anticipated lack of landfill capacity in the future, maintenance with separate permits could pose the same potentially significant cumulative impact to landfills as the proposed project.

Water Quality (Direct and Cumulative)

The potential for significant direct and cumulative water quality impacts under the Maintenance With Separate Permits Alternative would be essentially the same as with the Master Program. As with the proposed project, removal of vegetation and sediment during maintenance would eliminate the pollutant sequestering value of these components of the storm water facilities which could increase downstream pollutant levels. In addition, the Maintenance With Separate Permits Alternative could also generate erosion and sedimentation which could potentially affect downstream waters and associated wildlife habitats.

Similar water quality impacts could occur from the use of mechanized equipment and storage of hazardous materials (i.e., vehicle fuels or lubricants) associated with maintenance. Similar to the proposed Master Program, the accidental discharge of maintenance-related hazardous materials or trash into the drainage system could potentially result in significant impacts to local and downstream receiving waters.

7.2.3 Basis for Rejection

The Maintenance With Separate Permits Alternative was rejected because it would not provide the comprehensive approach to maintenance which characterizes the proposed Master Program. The CDFG, RWQCB and Corps have all expressed concern about the way the City has conducted storm water maintenance in the past. Historically, the City has conducted maintenance under separate Streambed Alteration Agreements and Section 404 Permits. As a result, mitigation has been on a case by case basis. State and federal Resource Agencies have also objected to the fact that separate permits do not allow consideration of cumulative effects of maintenance activities or the creation of larger more viable mitigation areas.

7.3 RAISED BANK ALTERNATIVE

7.3.1 Description

Under this alternative, structures (e.g., walls or levees) would be constructed along the top of channels to allow them to contain vegetation without compromising their ability to convey flood waters. The structures would offset the effect of vegetation and sediment by allowing water elevations to increase without spilling out into adjacent developed areas. However, accumulation of sediment and vegetation could ultimately eliminate the increased flood capacity created by the structures. Channel-specific engineering would be undertaken to determine the additional “bank” height needed.

7.3.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

Clearing of drainages, including mature trees located within storm water facilities, would not occur with the Raised Bank Alternative. As a result, the aesthetic value of associated with channel vegetation would be maintained. An impact that would occur under this alternative that would not occur with implementation of the proposed Master Program would be associated with adding structures along channels, which would preclude views into the channels. These impacts are considered potentially significant from both a direct and cumulative perspective.

Air Quality (Cumulative)

Under the Raised Bank Alternative, minimal emissions related to criteria pollutants would be generated. However, as with the proposed project, these emissions, in combination with other development, could result in a significant cumulative impact with respect to air quality.

Biological Resources (Direct, Indirect and Cumulative)

Under the Raised Bank Alternative, impacts to vegetation communities would be limited to the construction of walls or levees. This alternative would not include the clearing of vegetation from storm water facilities. The Raised Bank Alternative also would substantially reduce required impacts to jurisdictional habitat in comparison to the proposed Master Program. Dewatering and processing of dredge spoils would not be necessary under this alternative, as sediment within the storm water facilities would not be affected.

Because this alternative would not include the removal of any vegetation within the affected storm water facilities, impacts to wildlife habitat would be substantially reduced and limited to impacts associated with construction of walls and/or levees. However, these structures would have an adverse impact on wildlife by making it more difficult for upland wildlife to access the channels for water, food, and cover. Sensitive plant species within the storm water facilities would not be affected by implementation of this alternative.

Indirect noise impacts to nesting or breeding coastal California gnatcatchers, least Bell's vireo, and/or raptors could still occur under this alternative, as well as the proposed Master Program, if construction activities create noise in excess of 60 dB(A) L_{eq} in occupied habitat during the breeding seasons of these species. Increased downstream urban pollutant levels caused by the removal of vegetation associated with the proposed Master Program would not occur as vegetation would be retained with this alternative.

In summary, implementation of the Raised Bank Alternative would reduce but not avoid significant direct, indirect and cumulative biological impacts in comparison with the proposed Master Program.

GHG Emissions (Cumulative)

Under the Raised Bank Alternative, minimal GHG emissions would be generated. However, as with the proposed project, these emissions, in combination with other development, could result in a significant cumulative impact with respect to GHG emissions.

Historical Resources (Direct and Cumulative)

Impacts to historical resources could still potentially occur under this alternative as a result of construction of walls and/or levees. Impacts to such resources would be significant under both the proposed Master Program and this alternative. Direct and cumulative impacts would not be reduced by implementation of this alternative over the proposed Master Program but not to a level of insignificance.

Land Use (Direct)

Retention of the natural drainage courses through this alternative would promote retention of natural drainage courses and minimize impacts to biological resources. With the addition of walls or levees, the existing habitat could remain. However, the construction of walls and levees could impact historical resources located along the channels. Without mitigation, direct land use policy impacts related to ESL Regulations could be significant.

Under this alternative, the potential for temporary disturbance to adjacent residential uses associated with noise and dust would be slightly less than under the proposed Master Program because no clearing activities associated with drainage maintenance would occur. However, noise impacts would occur from the construction of walls and/or levees.

Paleontological Resources (Direct and Cumulative)

The potential for significant impacts to paleontological resources from implementation of this alternative, like the proposed Master Program, would be generally low, although significant impacts could occur depending on site-specific geologic conditions and proposed ground disturbance to construct the levees or walls.

Solid Waste Disposal (Cumulative)

This alternative would eliminate the impact on solid waste disposal because it would eliminate waste material associated with maintenance activities (e.g., dredge spoil, vegetation, and rubbish). Thus, this alternative would not have a significant, cumulative impact on solid waste disposal.

Water Quality (Direct and Cumulative)

Potentially significant erosion and sedimentation impacts would be associated with this alternative. As with the proposed project, initial construction of the levees and walls could generate erosion and sedimentation which could potentially affect downstream waters and associated wildlife habitats. In the long-term, the potential effects of maintenance on the ability of vegetation and sediments to sequester pollutants associated with the proposed Master Program would not occur with this alternative. However, the removal of polluted vegetation and plant material associated with the proposed Master Program would not occur.

Similar water quality impacts could potentially occur due to the use of mechanized equipment and storage of hazardous materials (i.e., vehicle fuels or lubricants). Similar to the proposed Master Program, the accidental discharge of construction-related hazardous materials or trash into the drainage system could potentially result in significant direct and cumulative impacts to local and downstream receiving waters.

7.3.3 Basis for Rejection

Although this alternative could potentially result in less impacts related to wetlands, water quality and solid waste disposal, the City rejected the alternative for factors related to wildlife habitat impacts, cost, visual quality, public safety and the temporary nature of the solution.

With respect to wildlife habitat, the structures along storm water facilities would have an adverse impact on wildlife by making it more difficult for upland wildlife to access the channels for water, food, and cover. Walling off the storm water facilities also would have an adverse visual impact. Drainage courses which support varying degrees of vegetation are considered a visual amenity in urban areas. Hiding storm water facilities behind structures would eliminate their visual value.

With respect to public safety, allowing the channels to fill with sediment could block side drains that empty into the channels which could cause water to back up and flood adjacent public and/or private properties.

The cost of designing and constructing structures along existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to construct the structures. Given the number of miles of drainage channels within the City, the cost of increasing flood capacity by constructing flood control structures is considered infeasible. Funding would be required to design and construct levees and/or walls. Council Policy 800-04 (Drainage Facilities) states that all projects with significant or total funding by the City shall be

specifically identified and scheduled in the Capital Improvement Program (CIP). Council Policy 800-14 (Prioritizing CIP Projects) outlines the prioritization and funding policy for which projects compete. The prioritization process allows for the analytical comparison of the costs and benefits of individual projects, as well as an opportunity to evaluate projects against one another on their relative merits. This alternative would therefore compete with other CIP projects for funding and implementation. Construction could be delayed indefinitely until funding is available while the need to maintain facilities would still exist. Thus, also due to the uncertainty of whether a particular CIP would be approved through separate discretionary actions for all or part of the construction of flood control structures, this alternative is considered infeasible. Conversely, annual maintenance activities associated with the Master Program would be appropriated and reviewed annually in the SWD budget.

Lastly, this alternative would not be effective in the long-term because accumulation of sediment would likely eventually offset the additional capacity created by the structures. Therefore, regular maintenance within storm water facilities as well as these structures, should they fail or break, would still be required.

7.4 CHANNEL BY-PASS ALTERNATIVE

7.4.1 Description

This alternative would involve construction of underground pipes that would divert some or all of the runoff around a channel segment to allow the channel to be naturally vegetated. Channel-specific modeling would be undertaken to determine the location and sizing of by-pass pipes to assure that vegetated channel segments can continue to support vegetation without resulting in flooding.

7.4.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

The aesthetic impacts associated with the Channel By-pass Alternative would be less than the proposed Master Program because it would avoid clearing of drainages, including mature trees located within some of the subject drainages. While some vegetation would need to be cleared for placement of the by-pass pipes, it would be less extensive than with the proposed Master Program. Thus, significant cumulative impacts to aesthetics and neighborhood character would be avoided by this alternative.

Air Quality (Cumulative)

Under the Channel By-pass Alternative, minimal emissions related to criteria pollutants would be generated. However, these emissions, in combination with other development, would result in a significant cumulative impact with respect to air quality.

Biological Resources (Direct, Indirect and Cumulative)

Under the Channel By-pass Alternative, impacts to vegetation communities would be limited to the construction of underground pipes. This alternative would not include the clearing of vegetation from storm water facilities. This alternative also would substantially reduce impacts to jurisdictional habitat in comparison to the proposed Master Program.

Because this alternative would not include the removal of vegetation within the affected storm water facilities, impacts to wildlife habitat would be substantially reduced and limited to impacts associated with underground pipes. In addition, sensitive plant species within the storm water facilities would not be affected by implementation of this alternative.

Potentially significant indirect impacts from construction activities associated with pipelines would still occur from implementation of this alternative, including indirect impacts to noise and exotic plant species. Indirect noise impacts to nesting or breeding coastal California gnatcatchers, least Bell's vireo, and/or raptors could still occur under this alternative, as well as the proposed Master Program, if maintenance activities create noise in excess of 60 dB(A) L_{eq} in occupied habitat during these species' breeding seasons. Increased downstream urban pollutant levels caused by the removal of vegetation associated with the proposed Master Program would not occur as vegetation would be retained with this alternative.

In summary, implementation of the Channel By-pass Alternative could result in a significant direct, indirect and cumulative impact on biological resources but the impact would be less than the proposed project.

GHG Emissions (Cumulative)

Under the Channel By-pass Alternative, minimal GHG emissions would be generated. However, these emissions, in combination with other development, would result in a significant cumulative impact with respect to GHG emissions.

Historical Resources (Direct and Cumulative)

Impacts to historical resources may still potentially occur under this alternative as a result of construction of underground pipes. Direct and cumulative impacts to such resources would be significant under both the proposed Master Program and this alternative.

Land Use (Direct)

This alternative would have less impact on natural drainages in the long-term because the associated wetland habitat would not have to be periodically removed to improve flood water conveyance. As with the proposed Master Program, implementation of this alternative would be consistent with the goals and objectives of the General Plan, as well as the ESL Regulations, MSCP Subarea Plan, and City HRG.

Under the Channel By-pass Alternative, the potential for temporary disturbance to adjacent residential uses associated with noise and dust would be slightly less than under the proposed Master Program, because no clearing activities associated with drainage maintenance would occur. However, this alternative would require the construction of underground pipelines, which would contribute to dust and noise impacts.

The Channel By-pass Alternative also would require additional encroachment into adjacent property for the placement of pipelines.

Thus, the Channel By-pass Alternative would have potentially significant direct land use impacts.

Paleontological Resources (Direct and Cumulative)

The potential for significant impacts to paleontological resources from implementation of this alternative, like the proposed Master Program, is considered to be generally low, although significant impacts could occur depending on site-specific geologic conditions and proposed ground disturbance. In addition, there is a potential for encroachment into paleontological resources to install the by-pass pipes.

Solid Waste Disposal (Cumulative)

This alternative would eliminate the impact on solid waste disposal because it would eliminate waste material associated with maintenance activities (e.g., dredge spoil, vegetation, and rubbish). Thus, this alternative would not have a significant, cumulative impact on solid waste disposal.

Water Quality (Direct and Cumulative)

Potentially significant erosion and sedimentation impacts would be associated with the use of mechanized equipment to construct underground pipes. The short-term water quality effects from proposed construction activities related to erosion and sedimentation could potentially affect downstream waters and associated wildlife habitats, with such impacts considered potentially significant. In the long-term, the natural pollutant filtration value of the vegetation within the channels would be maintained under this alternative, as no vegetation would be removed.

Similar water quality impacts could potentially occur due to the use of mechanized equipment and storage of hazardous materials (i.e., vehicle fuels or lubricants). Similar to the proposed Master Program, the accidental discharge of construction-related hazardous materials or trash into the drainage system could potentially result in significant direct and cumulative impacts to local and downstream receiving waters.

7.4.3 Basis for Rejection

Although this alternative would be the next environmentally-preferred alternative (after the No Maintenance Alternative) because it could potentially result in reduced impacts related to

wetlands, water quality and solid waste disposal, the City rejected the alternative as financially infeasible. In addition, by-pass pipes could physically impact or burden adjacent property owners related to construction of pipelines and/or easement acquisition. In addition to the cost of pipeline construction, the City would incur additional costs related to acquiring private property through which the pipes would pass.

While by-pass facilities located within or adjacent to property owned by the City could be less costly, since land acquisition costs would be avoided, funding would be required to design and construct such projects. Council Policy 800-04 (Drainage Facilities) states that all projects with significant or total funding by the City shall be specifically identified and scheduled in the Capital Improvement Program (CIP). Council Policy 800-14 (Prioritizing CIP Projects) outlines the prioritization and funding policy for which projects compete. The prioritization process allows for the analytical comparison of the costs and benefits of individual projects, as well as an opportunity to evaluate projects against one another on their relative merits. Having to compete with other CIP projects may extend the implementation and construction schedule until funding would be available; while the need to maintain a channel would still exist until the by-pass pipes are constructed. Thus, also due to the uncertainty of whether a particular CIP would be approved through separate discretionary actions for all or part of the construction of by-pass pipes, this alternative is considered infeasible. Conversely, annual maintenance activities associated with the Master Program would be appropriated and reviewed annually in the SWD budget.

Beyond the cost of acquiring easements, adjacent development and infrastructure would make it difficult to construct by-pass pipes without impacting existing structures including homes and businesses. Condemning structures would further add to the cost of the Channel By-pass Alternative. In addition, this alternative would not be effective in the long-term because accumulation of sediment in an open channel that was not undergrounded would likely offset the additional capacity created by the by-pass. Given these cost factors, accommodating flood waters with by-pass pipes is considered infeasible.

7.5 WIDENED CHANNEL ALTERNATIVE

7.5.1 Description

Under this alternative, the configuration of channels would be modified to increase the volume capacity of the channel. The goal of increasing the channel volume would be to enable vegetation to exist in the channel without causing flooding. In order to promote wetland habitat, the modified channels would be completely earthen, and any pre-existing concrete or other impermeable forms of channel protection would be removed.

Channel-specific modeling would be undertaken to determine the additional width needed. In most cases, the capacity would be increased by widening the cross-section of the channel. Increasing the depth of the channel would also increase capacity but is expected to be difficult to achieve in most cases due to constraints imposed by the slope limitations on the channel banks and maintaining downstream gradients.

Implementation of this alternative would require a substantial grading operation within the existing channels as well as encroachment into adjacent areas to accommodate the widened cross-section. As the City typically has little, if any, right-of-way beyond the existing channels, it is anticipated that implementation of this alternative would require the City to purchase property and/or secure easements from landowners adjacent to the affected channel.

7.5.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

In the short-term, the widened channels would detract from the visual character of the surrounding areas. However, once the vegetation becomes re-established, this alternative would not have a significant impact on the aesthetics and neighborhood character because the storm water facilities would continue to represent an aesthetically-pleasing feature in the local landscape. In addition, any removal of concrete drainage structures that would result from the widening would also improve the visual character of the surrounding area. Maintenance activities in the widened channels would be anticipated to be considerably less than the proposed project. While periodic removal of sediment and debris would continue to be necessary, large-scale removal of vegetation would not be required. As such, the aesthetic value of wildlife associated with channel vegetation would be better with this alternative in comparison with the proposed project.

Air Quality (Cumulative)

Under the Widened Channel Alternative, minimal criteria pollutant emissions would be generated. However, these emissions, in combination with other development, would result in a significant cumulative impact with respect to air quality.

Biological Resources (Direct, Indirect and Cumulative)

With the Widened Channel Alternative, short-term impacts to vegetation communities within the affected channels may be greater than the proposed Master Program because the banks as well as the channel bottom would be impacted initially. However, unlike the proposed project, at least some portion of the vegetation would be able to re-establish within the channel without subsequent removal.

Potentially significant short-term indirect impacts from channel widening would be greater than the proposed project due to the amount of disturbance that would be required within the channels themselves. However, the long-term water quality impacts related to the loss of urban pollutant removal by in-channel vegetation would be avoided, as much of the vegetation would be expected to remain in the widened channels. Uncontrolled erosion and sedimentation during channel widening could impact downstream wildlife habitat. Construction activities in channels could impede the movement of animals through natural drainage corridors while channel widening is occurring. Indirect noise impacts to nesting or breeding coastal California gnatcatchers, least Bell's vireo, and/or raptors could still occur under this alternative, as well as

the proposed Master Program, if maintenance activities create noise in excess of 60 dB(A) L_{eq} in occupied habitat during these species' breeding seasons.

In summary, implementation of the Widened Channel Alternative would substantially reduce the long-term biological impacts in comparison with the proposed Master Program, but would have similar short-term impacts.

GHG Emissions (Cumulative)

Under the Widened Channel Alternative, minimal GHG emissions would be generated. However, these emissions, in combination with other development, would result in a significant cumulative impact with respect to GHG emissions.

Historical Resources (Direct and Cumulative)

Impacts to historical resources may occur under this alternative as a result of encroachment into adjacent property from the widened channel. In fact, historical impacts would have a high probability of occurring due to the expectation that existing buildings would likely have to be torn down to accommodate the widened channels. Given the fact that many of these channels occur in older urban sections of the City of San Diego, the chances are high that structures greater than 45 years old would be affected.

The potential for affecting significant historic structures is considered substantially higher with the Widened Channel Alternative than the proposed Master Program. Thus, the Widened Channel Alternative would have significant direct and cumulative impacts which could be greater than the proposed Master Program.

Land Use (Direct)

Increasing the width and allowing wetland vegetation to persist in natural drainage courses would reflect land use policy goals to retain natural drainage courses and minimize impacts to biological resources. With the widened cross-section, some portion of the existing habitat could remain. However, increasing the width of existing channels could impact historical resources located along the channels. As with the proposed project, implementation of this alternative, with appropriate mitigation, would be consistent with the goals and objectives of the General Plan, as well as the ESL Regulations, MSCP Subarea Plan, and City HRG.

The Widened Channel Alternative is expected to have a substantial impact on adjacent development. Given the limited City right-of-way, and the fact that the majority of the affected channels are immediately bordered by residential or commercial development, a large number of homes and businesses would likely need to be eliminated to accommodate the widened channels. This would have significant land use impacts related to the loss of housing and imposition of financial hardship on affected businesses. In addition, for the adjacent development that would remain, this alternative would substantially increase the potential for temporary disturbance to adjacent residential uses over that of the proposed Master Program because the grading required to widen channels would involve considerably greater equipment noise and dust generation. The

ability of financial compensation to offset the land use impact cannot be determined at this time, but, it is possible that the impacts would not be fully mitigated by financial compensation. Thus, the land use impacts are considered significant and potentially unmitigated.

Paleontological Resources (Direct and Cumulative)

The Widened Channel Alternative could result in significant impacts to paleontological resources. Unlike the proposed project, this alternative would involve substantial grading. Where widened channels cross through geologic formations known to exhibit a moderate to high potential for fossils, the excavation needed to increase the width of those channels would potentially impact significant paleontological resources.

Solid Waste Disposal (Cumulative)

While the initial reconstruction of the channel would generate sediment and vegetation that may require disposal at City landfills, this alternative would reduce the long-term impact on solid waste disposal because it would eliminate or reduce the need to dispose of vegetation waste created during maintenance. Under this alternative, some portion of the vegetation within the channel is expected to be able to remain in the channel without impacting its ability to accommodate flood water. Thus, this alternative would not have a significant, cumulative impact on solid waste disposal.

Water Quality (Direct and Cumulative)

Potential significant erosion and sedimentation impacts would be associated with the use of mechanized equipment to reconstruct the channels. The short-term water quality effects from proposed construction activities related to erosion and sedimentation could potentially affect downstream waters and associated wildlife habitats, with such impacts considered potentially significant. However, the effect of removing sediment and vegetation multiple times, as would occur with the proposed project would be reduced. Thus, the long-term water quality impact would be avoided.

Similar water quality impacts could potentially occur due to the use of mechanized equipment and storage of hazardous materials (i.e., vehicle fuels or lubricants). Similar to the proposed Master Program, the accidental discharge of construction-related hazardous materials or trash into the drainage system could potentially result in significant impacts to local and downstream receiving waters.

7.5.3 Basis for Rejection

Although this alternative would potentially result in a substantial reduction in long-term impacts related to wetlands and solid waste disposal, the City rejected the alternative for factors related to cost and potential impacts to adjacent development.

The cost of designing and constructing wider channels along existing drainage facilities would be substantial. In addition, the cost would be increased by the need to acquire private property to accommodate the widening. Given the number of miles of drainage channels within the City, the

cost of increasing flood capacity through channel widening is considered infeasible. Lastly, this alternative would not necessarily eliminate the cost of periodic maintenance. Although maintenance frequency and extent would be considerably reduced, no natural drainage course can be maintenance-free. Periodic removal of sediment, debris and, possibly, invasive plant material (e.g. arundo) would still be required to maintain the effectiveness of the channel to safely convey flood water.

Widening channels could impact adjacent property owners who would be required to relocate their existing homes, businesses, and infrastructure. Even though the City would be required to provide compensation based on fair market value, relocation could disrupt residents and business owners' way of life and income. By acquiring property in densely urbanized areas to widen channels, the loss of housing could also adversely affect the City's ability to provide adequate housing. In addition, because many of the affected homes are expected to have property values below the City-wide median home price, the loss of these homes would adversely affect the affordable housing stock in the City. Goal 1 of the City's Housing Element seeks to "Ensure the provision of sufficient housing for all income groups to accommodate San Diego's anticipated share of regional growth over the next Housing Element Cycle, FY 2005-2010".

The cost of widening facilities located within or adjacent to City-controlled property could be less of a financial burden, however funding would still be required to implement and construct such projects. Council Policy 800-04 (Drainage Facilities) states that all projects with significant or total funding by the City shall be specifically identified and scheduled in the Capital Improvement Program (CIP). Council Policy 800-14 (Prioritizing CIP Projects) outlines the prioritization and funding policy for which projects compete. The prioritization process allows for the analytical comparison of the costs and benefits of individual projects, as well as an opportunity to evaluate projects against one another on their relative merits. In the long-term, channel widening could reduce flooding risks and be self-mitigating, as described below. However, having to compete with other CIP projects for funding may delay implementation and construction indefinitely; while the need to maintain existing storm water facilities would still exist until channels are widened. Conversely, annual maintenance activities associated with the Master Program would be appropriated and reviewed annually in the SWD budget.

Although channel widening is not considered a feasible alternative for general channel maintenance, this technique is recognized in Section 4.3, Biological Resources, as a potential approach to mitigation provided the vegetation does not have to be periodically maintained to retain the flood control function of the widened channel. The Master Program would not prevent SWD from pursuing channel widening as a CIP project for specific channels, when feasible. Where appropriate conditions exist (e.g., vacant land and favorable hydrologic conditions), channel widening could create direct and indirect benefits with respect to biological resources. Where sufficient hydrology conditions exist to support additional wetland vegetation, channel widening could result in a net increase in the amount of wetland habitat. This would constitute wetland creation which is the most valued form of mitigation. The ability to re-establish wetland vegetation within its original location after channel widening would eliminate the repeated temporary loss of habitat that would occur from maintenance under the proposed project.

7.6 OFF-SITE RUNOFF REDUCTION ALTERNATIVE

7.6.1 Description

This alternative would involve implementing low impact development (LID) measures within off-site watershed areas to reduce runoff generation and resulting flows into storm water facilities located within the Master Program. The LID process is intended to mimic predevelopment hydrologic conditions by using design practices and measures to effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source. LID measures could involve efforts such as: (1) reducing impervious surfaces through the use of vegetation or permeable pavement, and reducing impervious surfaces and compaction in landscaped and open space areas; (2) directing runoff into pervious areas (e.g., landscaping); (3) directing runoff into engineered IMP sites (e.g., bioretention facilities, planter boxes, cisterns or infiltration facilities); and/or (4) creating self-contained/self-treating drainage management areas such as green roofs or basins. LID design principals and measures would also help to reduce the potential for erosion and sedimentation associated with maintenance

This alternative would be, by nature, be implemented in areas outside the storm water facilities. In addition, the Off-site Runoff Reduction Alternative would target retrofitting LID measures in applicable existing developed areas as well as sites with new development or redevelopment projects. Specifically, the City Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code Section 43.03, et seq.) requires that all new development and redevelopment activities comply with the storm water pollution prevention requirements in Chapter 14, Article 2, Division 1 (Grading); and Chapter 14, Article 2, Division 2 (Storm Water Runoff Control and Drainage) of the Land Development Code. These requirements are outlined in the Storm Water Standards Manual (Storm Water Manual) and associated LID Design Guide, with LID principals required to be included in the design of all applicable projects proposed as of the March 2008 (City of San Diego 2011). Accordingly, this alternative would target existing (pre March 2008) development (i.e., areas with no existing LID measures) to avoid any duplication of effort with activities conducted pursuant to the Storm Water Manual and related regulatory requirements.

7.6.2 Impact Analysis

Aesthetics/Neighborhood Character (Cumulative)

The cumulative aesthetic impacts associated with the Off-site Runoff Reduction Alternative would be expected to be less than for the proposed Master Program. This conclusion is based on the anticipated reduction of vegetation clearing in local drainages as well as the fact that most LID facilities/efforts would not entail substantial effects to aesthetics or neighborhood character (i.e., most facilities would be vegetated and/or low-profile).

Air Quality (Cumulative)

Under the Off-site Runoff Reduction Alternative, minimal emissions related to criteria pollutants would be generated. However, these emissions, in combination with other development, could result in a significant cumulative impact with respect to air quality.

Biological Resources (Direct, Indirect and Cumulative)

Potential impacts to biological resources (including vegetation and jurisdictional habitats) under the Off-site Runoff Reduction Alternative would be expected to be less than those identified for the proposed Master Program. Specifically, the construction and maintenance of potential LID measures under this alternative would likely be limited to previously developed areas, with a corresponding reduction of vegetation clearing in local drainages. Related potential impacts to wildlife habitat and sensitive plant and animal species would also be reduced, although potentially significant indirect impacts from construction activities would still occur under this alternative. Specifically, indirect noise impacts to nesting or breeding coastal California gnatcatchers, least Bell's vireo, and/or raptors could still occur under this alternative if LID measures and/or channel maintenance activities create noise in excess of 60 dB(A) L_{eq} in or near occupied habitat during the associated breeding seasons. Increased downstream urban pollutant levels caused by the removal of vegetation associated with the proposed Master Program would be reduced somewhat under this alternative due to the previously noted reduction in vegetation clearing and the fact that LID measures would result in some reduction of pollutant (as well as runoff) levels.

In summary, implementation of the Off-site Runoff Reduction Alternative would likely reduce overall biological impacts in comparison with the proposed Master Program, although the level and extent of this reduction would depend on the nature and location of specific LID measures (and the corresponding reduction in vegetation clearing).

GHG Emissions (Cumulative)

Under the Off-site Runoff Reduction Alternative, minimal GHG emissions would be generated. However, these emissions, in combination with other development, would result in a significant cumulative impact with respect to GHG Emissions.

Historical Resources (Direct and Cumulative)

Impacts to historical resources may still potentially occur under this alternative as a result of required (albeit reduced) channel maintenance, and implementation of LID measures. Potential impacts to historical resources would be significant under both the proposed Master Program and the Off-site Runoff Reduction Alternative.

Land Use (Direct)

Unlike the proposed Master Program, this alternative would allow native vegetation to remain within natural drainages. That is, the use of LID measures in off-site watershed areas could reduce flows into Master Program facilities, and correspondingly reduce maintenance requirements in riparian areas. In addition, as with the proposed Master Program, implementation of this alternative would be expected to be consistent with the goals and objectives of the General Plan, as well as the ESL Regulations, MSCP Subarea Plan, and City HRG. Specifically, this alternative would target previously developed sites, and would be focused on areas such as existing landscaping and drainage facilities.

Under the Off-site Runoff Reduction Alternative, the overall potential for temporary disturbance to adjacent residential uses associated with noise and dust would be slightly higher than under the proposed Master Program. That is, while clearing activities associated with drainage maintenance would be locally reduced or (potentially) avoided, construction operations related to implementing LID measures would likely occur in closer proximity to existing residential uses. Correspondingly, this alternative also would also require additional encroachment into adjacent properties for the permanent placement and maintenance of LID measures. Thus, as with the proposed project, this alternative could result in significant direct land use impacts.

Paleontological Resources (Direct and Cumulative)

The potential for significant impacts to paleontological resources from implementation of this alternative, like the proposed Master Program, is considered to be generally low. Significant direct and cumulative impacts could potentially occur, however, depending on site-specific geologic conditions and ground disturbance related to required (albeit reduced) vegetation removal and excavation/grading associated with installation of LID measures.

Solid Waste Disposal (Cumulative)

This alternative would reduce the overall impact on solid waste disposal identified for the proposed Master Program, due to the reduction of materials such as dredge spoil, vegetation, and rubbish associated with maintenance activities. Some additional materials would be generated during installation and maintenance of LID measures, however, with associated cumulative impacts to solid waste disposal considered potentially cumulatively significant.

Water Quality (Direct and Cumulative)

Potentially significant erosion and sedimentation impacts would be associated with activities conducted under this alternative, including the use of mechanized equipment for vegetation removal, staging areas, and/or LID measures. The short-term water quality effects from proposed construction activities related to erosion and sedimentation could potentially affect downstream waters and associated wildlife habitats, with such impacts considered potentially significant. In the long-term, the natural pollutant filtration value of the vegetation within the channels would be partially retained under this alternative, as vegetation removal would be scaled back and the LID measures would also provide runoff filtering and pollutant removal (in addition to reducing flow levels).

Similar water quality impacts could potentially occur due to the use of mechanized equipment and storage of hazardous materials (i.e., vehicle fuels or lubricants). Similar to the proposed Master Program, the accidental discharge of construction-related hazardous materials or trash into the drainage system could potentially result in significant impacts to local and downstream receiving waters.

7.6.3 Basis for Rejection

Although the Off-site Runoff Reduction Alternative could potentially result in fewer impacts to aesthetic/neighborhood character and biological resources, it was rejected by the City since it would have no substantial impact on the probability of flooding and would, therefore, fail to meet the project's main objectives. LID targets the frequent but low intensity storms and have very little to no effect on storms beyond the 10-year storm event. The regulations that require municipalities to implement LID do not require these concepts be analyzed for storm events greater than the 10-year storm. In addition, it was rejected by the City as being financially infeasible and posing a burden on adjacent property owners. The cost of constructing and maintaining adequate LID measures to generate a meaningful reduction in runoff, while unknown, would likely be high due to the anticipated extensive nature of LID measures that would be required under this alternative. In addition to construction and long-term maintenance costs, the City would incur additional costs related to acquiring private property/easements for the placement of LID measures. Based on these considerations, the Off-site Runoff Reduction Alternative is considered infeasible as a stand-alone alternative to the proposed Master Program. It should be noted, however, that based on the evaluation of this alternative, the City has modified the proposed Master Program to encompass the use of LID measures in applicable areas. The inclusion of these types of measures in the proposed design would result in a more integrated approach involving efforts to limit vegetation removal in associated drainages to the maximum extent feasible, while still obtaining the identified Master Program objectives.

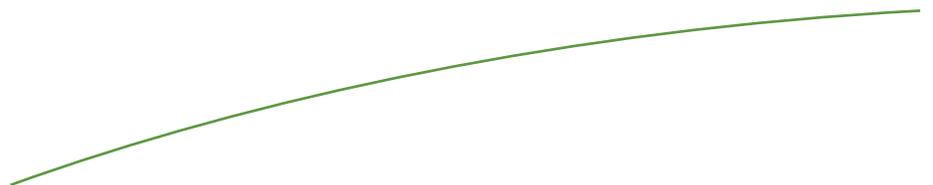
In addition to cost and acquisition issues, the timing associated with a substantial reduction of off-site surface water generation is problematic. Although future development projects are required to incorporate LID measures, the rate at which new development is expected to occur in these areas is likely to be extremely protracted, given today's economic conditions. Thus, it may take decades for enough new development to incorporate LID measures to result in a substantial reduction in storm water runoff and the associated maintenance activities.

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Chapter 8.0

EFFECTS FOUND NOT TO BE SIGNIFICANT



CHAPTER 8.0 – EFFECTS FOUND NOT TO BE SIGNIFICANT

Based on an Initial Study, NOP scoping process and analysis in Chapter 4.0, Environmental Analysis, it was determined that the proposed Master Program would not have a significant environmental impact in the following areas: agriculture (direct or cumulative); air quality (direct); energy (direct or cumulative); geology and soils (direct or cumulative); GHG emissions (direct); light, glare, and shading (direct or cumulative); mineral resources (direct or cumulative); population and housing (direct or cumulative); public services and utilities (direct or cumulative); recreational resources (direct or cumulative); transportation/ circulation (direct or cumulative); and water conservation (direct or cumulative). The reasons for the non-significance conclusion are provided below with a discussion of each issue.

8.1 AGRICULTURE

The vast majority of the storm water facilities are not located within existing or designated agricultural areas. A few portions of some of the facilities are within areas that are designated as Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Grazing Land. However, only a few agricultural operations, particularly in the south bay area, currently exist. Maintenance of storm water facilities would not preclude future agricultural use in areas that could, in the future, be potentially put into agricultural production. Thus, the proposed Master Program would not result in significant direct or cumulative impacts to agricultural resources.

8.2 AIR QUALITY

Air quality impacts associated with the proposed Master Program would be limited primarily to short-term exhaust and dust emissions from equipment operations as well as odors emitted from temporary stockpiling of dredged soil and vegetation. To help minimize impacts to sensitive environmental resources, most of the equipment to be used would be smaller (i.e., more portable and agile) than the larger, more conventional equipment typically associated with infrastructure projects. Additionally, the nature of activities associated with the proposed Master Program is relatively limited, as described in Chapter 3.0, Project Description. The proposed Master Program would involve the maintenance of storm water facilities (i.e., removal of trash, sediment, vegetation, debris, etc.). Grading and excavation activities associated with drainage clearing or maintenance would generally occur in damp soils, which would preclude the creation of substantial amounts of dust. In addition, project activities would be conducted in accordance with San Diego County Air Pollution Control District standards, which require dust suppression methods such as the use of water trucks. Therefore, direct impacts associated with air quality would be less than significant. As discussed in subchapter 6.10, Air Quality, the project would have significant cumulative air quality change impacts.

Stockpiling would be temporary, as would any odor associated with the dredged material or vegetation. Thus, no significant odor impacts would be generated by stockpiling. In addition, maintenance of storm water facilities would include the removal of any standing water and trash that may create objectionable odors. As such, implementation of the proposed Master Program would help eliminate any such odors associated with the existing status of the storm water

facilities to be maintained under the proposed Master Program. Accordingly, no negative impacts associated with odors would occur.

8.3 GREENHOUSE GAS EMISSIONS

GHG emissions are a local, federal and global concern because of the climate change effects associated with increasing levels of GHG emissions worldwide. Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiating heat from escaping, thus warming the Earth's atmosphere. GHG traps heat in the atmosphere. GHG emissions result from both natural processes and human activities. Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of GHG in the atmosphere. Global climate change attributable to human activities (mainly CO₂, CH₄, and N₂O) is currently one of the most important and widely debated scientific, economic, and political issues in the United States.

According to the San Diego County GHG Inventory, which was prepared by the School of Law Energy Policy Initiative Center (EPIC) at the University of San Diego in 2008, a total of 34.4 million metric tons (MMT) CO₂e were generated within the County of San Diego in the year 2006. The largest contributor of GHG was from on-road transportation, which comprised 46 percent (16 MMT CO₂e) of the total amount. The second highest contributor was generation of electricity, which contributed 9 MMT CO₂e, or 25 percent of the total. Together the on-road transportation and electrical generation comprised 71 percent of the total GHG emissions in the County. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road equipment, waste, agriculture, rail, water-borne navigation, and other fuels.

In order to serve as a guide for determining when a project triggers the need for a GHG significance determination, the City of San Diego has established an interim screening threshold for GHG emission analysis. Based on guidance in a report prepared by the California Air Pollution Control Officers Association (CAPCOA) entitled CEQA & Climate Change, dated January 2008, the City utilizes a threshold of 900 metric tons of CO₂e to evaluate whether a project could have a significant impact on global climate. Projects with emissions above the 900-metric ton threshold are required to evaluate whether emissions can be reduced below "business as usual" levels. The City has proposed a target of 28.35 percent below "business as usual" as its significance threshold, based on the California ARB's Scoping Plan and year 2020 "business as usual" forecast model, which represents the GHG emissions that would be expected to occur without any GHG project reducing features or mitigation as mandated under AB 32.

GHG emissions would be associated with the proposed maintenance activities as a result of equipment used to carry out maintenance. In order to estimate the average annual GHG emissions related to maintenance, an analysis was conducted that assumed that up to 10 miles of storm water facilities would be maintained each year. Assuming that daily maintenance could cover up to 450 linear feet, a total of 120 working days were assumed in a year. Based on these

assumptions, maintenance could generate up to 270 tons of CO₂e emission per year, as presented in Table 8.3-1.

Table 8.3-1 ESTIMATED ANNUAL GHG EMISSIONS				
Equipment	CO₂ (Tons per Year)	N₂O (Tons per Year)	CH₄ (Tons per Year)	CO₂e (Tons per Year)
Backhoes	26.7657	0.0013	0.0029	
Cranes	23.1492	0.0010	0.0023	
Dozers	51.9627	0.0032	0.0071	
Dump Trucks	74.5093	0.0028	0.0062	
Excavators	30.7033	0.0016	0.0036	
Loaders	15.2701	0.0013	0.0028	
Skid Steer	42.1059	0.0052	0.0117	
Total	264.47	0.016	0.037	270.32

As shown in Table 8.3-1, the average annual GHG emissions associated with the Master Program are estimated to be up to 270 metric tons of CO₂e emissions per year, which would not exceed the interim threshold of 900 metric tons of CO₂e per year. In comparison with the 34.4 million metric tons (MMT) CO₂ equivalent that were generated within the County in 2006, GHG emissions related to the proposed maintenance activities would be minimal, and would not constitute a significant direct relative to climate change. However, as discussed in Subchapter 6.11, Greenhouse Gas Emissions, the proposed Master Program would result in a cumulatively significant impact with respect to GHG emissions.

8.4 ENERGY

Other than relatively minor amounts of fossil fuel consumption associated with the operation of maintenance equipment, implementation of the proposed Master Program would not have any energy demands. The use associated with such equipment would not be excessive and would be temporary in nature. Implementation of the proposed Master Program would not preclude recovery of fossil fuel resources and no known economic fossil fuel resources are present within the vicinity of the storm water facilities to be maintained. Accordingly, direct or cumulative impacts associated with energy would be less than significant.

8.5 GEOLOGY AND SOILS

The proposed Master Program would generally not involve any maintenance efforts that would generate issues related to geology and soils, with the exception of erosion/sedimentation, which is addressed in Subchapter 4.8, Water Quality. Specifically, as described in Chapter 3.0, Project Description, proposed operations would consist largely of removing and disposing of sediment, debris, and associated vegetation that accumulate in storm water facilities over time. In those cases where facilities or operations such as by-pass structures (e.g., coffer dams to divert flows around maintenance areas), or stockpiling of materials or spoils are required, they would be

designed or conducted in accordance with applicable seismic standards and/or geotechnical engineering practices, and no associated significant direct or cumulative impacts would result.

8.6 LIGHT, GLARE, AND SHADING

Clearing and maintenance activities associated with the proposed Master Program would be temporary and would occur during daylight hours (except under emergency situations). The proposed Master Program would not result in the creation of anything that would result in glare. No buildings or other such structures would be constructed during clearing and maintenance activities. As such, no light, glare, or shading direct or cumulative impacts would occur.

8.7 MINERAL RESOURCES

Some portions of the subject storm water facilities may cross areas classified by the State Geologist as MRZ-2 (areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists). However, implementation of the proposed Master Program would not preclude the recovery of any on-site mineral resources. As such, no direct or cumulative mineral resource impacts would occur.

8.8 POPULATION AND HOUSING

Maintenance activities under the proposed Master Program would take place within existing storm water facilities in canyons, other environmentally sensitive lands and along existing streets and other rights-of-way. The proposed Master Program would not impact population growth or displace existing housing or people. The proposed Master Program also would not foster population growth, either directly or indirectly, or necessitate the construction of new housing. No direct or cumulative impacts to population or housing would occur.

8.9 PUBLIC SERVICES AND UTILITIES

Failure to properly maintain storm water facilities could result in flooding of adjacent properties, increasing the risk of loss of life and property. The proposed Master Program would help improve and maintain water quality within affected storm water facilities by removing illegally dumped materials such as trash, appliances, furniture, shopping carts, and tires, as well as debris, sediment, and vegetation. As such, the proposed Master Program would be beneficial to storm water drainage within the City. Police, fire, schools, or parks would not be affected by implementation of the proposed Master Program. Utilities related to communications, energy, wastewater, and water would not be significantly impacted because maintenance activities would not result in any new excavation or structures which could impact these existing utilities. Thus, no direct or cumulative impacts to these facilities would occur with the proposed project.

As discussed in Subchapter 6.8, Solid Waste, solid waste generated by channel maintenance (e.g., green waste and hazardous materials) would not constitute a significant direct impact on solid waste disposal capacity within the City but would contribute to the anticipated challenges in the future associated with solid waste disposal.

8.10 RECREATIONAL RESOURCES

The proposed Master Program would not include the construction of any recreational facilities or require the construction or expansion of such facilities. The proposed Master Program area includes canyons and other environmentally sensitive lands located throughout the City, some of which may currently be used for passive recreational uses. If maintenance activities preclude access to and/or through recreational areas associated with storm water facilities, the disruption would be temporary and, thus, less than significant.

8.11 TRANSPORTATION/CIRCULATION

Implementation of individual projects under the proposed Master Program would temporarily result in minimal traffic to roadways associated with maintenance workers' personal vehicles and the transportation of equipment to and from the work sites. This temporary and minor increase in traffic would not substantially add to the existing traffic volumes on roadways, nor would it affect existing or planned transportation systems.

Activities associated with implementation of the proposed Master Program would generally be limited to off-road areas, and would not have a significant impact on transportation/circulation. In some cases, staging and/or work areas for individual projects would be within streets and/or rights-of-way. This would require temporary partial or full lane closures and the diversion of traffic around work areas. If such is required, a construction traffic control plan would be prepared and implemented to minimize potential traffic impacts.

Implementation of the proposed Master Program would have a minimal effect on parking, as a limited number of maintenance workers would be required for each project. When able to do so, workers would park off the street; however, in some cases they may need to park on the street or within parking lots.

Thus, direct or cumulative impacts to transportation/circulation and parking would be less than significant.

8.12 WATER CONSERVATION

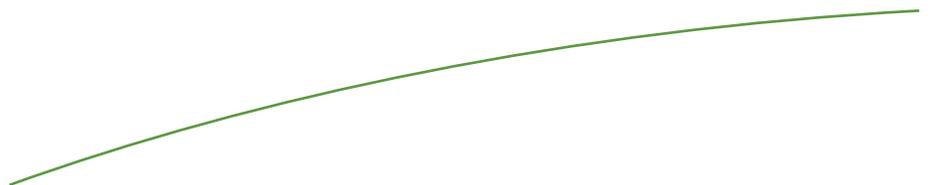
Activities associated with implementation of the proposed Master Program would not require the use of notable quantities of water. Minor amounts of water may be necessary for dust control during maintenance but, due to the temporary nature of the demand for water supply associated with the proposed Master Program and the limited quantities typically consumed during the maintenance, direct or cumulative impacts on water supply would be less than significant.

Some individual projects may require revegetation of staging areas, if the staging areas would impact sensitive vegetation communities. Temporary irrigation may be required until plants are established. Because the disturbance areas would be relatively small, and therefore would require little water for irrigation, and irrigation would be short term, direct or cumulative impacts associated with water conservation would be less than significant.

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Chapter 9.0
SIGNIFICANT IRREVERSIBLE
ENVIRONMENTAL CHANGES THAT WOULD
BE INVOLVED IN THE PROPOSED ACTION,
SHOULD IT BE IMPLEMENTED



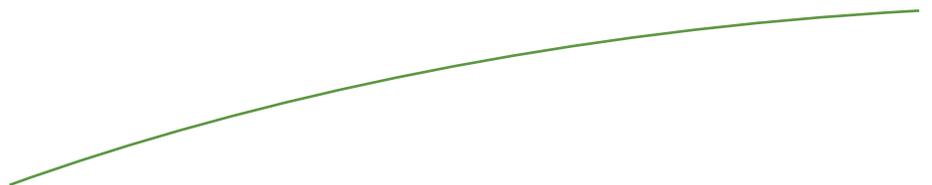
CHAPTER 9.0 – SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION, SHOULD IT BE IMPLEMENTED

Implementation of the Master Program would not result in any irreversible environmental changes. Maintenance associated with the Master Program would not alter the configuration of natural drainage courses. Although maintenance would remove vegetation within drainage courses, the loss of vegetation would not be irreversible. Wetland vegetation is adapted to recovery after major storm events. As a result, wetland vegetation within the drainages would become re-established with cessation of maintenance. The need for routine clearing of channels is evidence of the fact that maintenance effects on vegetation would not be irreversible.

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Chapter 10.0
SIGNIFICANT UNAVOIDABLE
ADVERSE IMPACTS



CHAPTER 10.0 - SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Section 15126(b) of the State CEQA Guidelines requires an EIR to “describe any significant impacts, including those that can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.”

Chapters 4.0, Environmental Analysis, and 6.0, Cumulative Impacts, of this PEIR provide a description of the potential environmental impacts of the proposed Master Program and recommends mitigation measures to reduce impacts to a less than significant level, where possible. In some cases, however, the potential for significant impacts to occur and/or the ability to fully mitigate such impacts will depend on the specific setting for, and characteristics of, an individual maintenance activity. Based on the analysis contained in Chapters 4.0 and 6.0, the project would have unavoidable impacts with respect to the following: aesthetics/neighborhood character (cumulative), air quality (cumulative), biological resources (cumulative), GHG emissions (cumulative), historical resources (cumulative), paleontological resources (cumulative), solid waste (cumulative), and water quality (cumulative).

As discussed in Subchapter 6.1, Aesthetics/Neighborhood Character, the removal of wetland vegetation would combine with other future development in the City to cumulatively impact aesthetics and neighborhood character.

As discussed in Subchapters 6.10, Air Quality, and 6.11, GHG Emissions, significant cumulative air quality and GHG emissions impacts would also be unavoidable. Although nominal, any increase in criteria pollutant and GHG emissions would be considered cumulatively significant, unavoidable impact relate to the proposed maintenance activities.

As discussed in Subchapter 6.2, Biological Resources, given the historic reduction in biological resources and the anticipated reductions in the future, the significant cumulative biological resource impacts associated with the proposed storm water maintenance would be unavoidable.

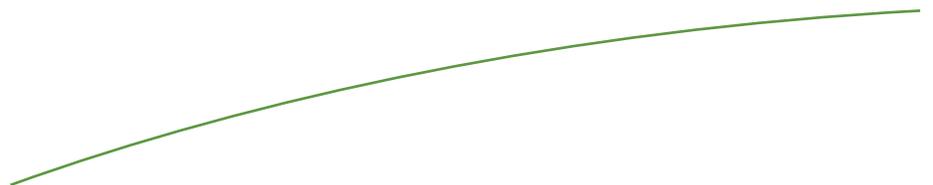
As discussed in Subchapter 6.3, Historic Resources and 6.7, Paleontological Resources, any loss of historic or paleontological resources from maintenance would result in a significant, unavoidable cumulative impact on these resources within the City.

Lastly, as discussed in Subchapter 6.8, Solid Waste, any contribution to solid waste within the City would represent a significant, cumulative impact which cannot be avoided.

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Chapter 11.0
MITIGATION MONITORING AND
REPORTING PROGRAM



CHAPTER 11.0 – MITIGATION MONITORING AND REPORTING PROGRAM

Section 21081.6 of the State of California Public Resources Code requires a Lead or Responsible Agency that approves or carries out a project where an environmental impact report (EIR) has identified significant environmental effects to adopt a “reporting or monitoring program for adopted or required changes to mitigate or avoid significant environmental effects.” The City of San Diego is the lead Agency for the Master Program PEIR, and, therefore, is responsible for implementation of the MMRP. Because the PEIR recommends measures to mitigate these impacts, an MMRP is required to ensure that adopted mitigation measures are implemented.

As Lead Agency for the proposed project under CEQA, the City of San Diego will administer the MMRP for the following environmental issue areas: biological resources, historical resources, land use policies, paleontological resources, and water quality.

GENERAL

General Mitigation 1: Prior to commencement of work, the ADD Environmental Designee of the Entitlements Division shall verify that mitigation measures for impacts to biological resources (Mitigation Measures 4.3.1 through 4.3.20), historical resources (Mitigation Measures 4.4.1 and 4.4.2), land use policy (Mitigation Measures 4.1.1 through 4.1.13), paleontological resources (Mitigation Measure 4.7.1), and water quality (Mitigation Measures 4.8.1 through 4.8.3) have been included in entirety on the submitted maintenance documents and contract specifications, and included under the heading, "Environmental Mitigation Requirements." In addition, the requirements for a Pre-maintenance Meeting shall be noted on all maintenance documents.

General Mitigation 2: Prior to the commencement of work, a Pre-maintenance Meeting shall be conducted and include, as appropriate, the MMC, SWD Project Manager, Biological Monitor, Historical Monitor, Paleontological Monitor, Water Quality Specialist, and Maintenance Contractor, and other parties of interest.

General Mitigation 3: Prior to the commencement of work, evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

General Mitigation 4: Prior to commencement of work and pursuant to Section 1600 et seq. of the State of California Fish & Game Code, evidence of compliance with Section 1605 is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

BIOLOGICAL RESOURCES

Potential impacts to biological resources would be reduced to below a level of significance through implementation of the following mitigation measures as well as Mitigation Measures 4.1-1 through 4.1-25.

Mitigation Measure 4.3.1: Prior to commencement of any activity within a specific annual maintenance program, a qualified biologist shall prepare an IBA for each area proposed to be maintained. The IBA shall be prepared in accordance with the specifications included in the Master Program.

Mitigation Measure 4.3.2: No maintenance activities within a proposed annual maintenance program shall be initiated before the City's Assistant Deputy Director (ADD) Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IBAs including proposed mitigation for each of the proposed activities. In their review, the ADD Environmental Designee and agencies shall confirm that the appropriate maintenance protocols have been incorporated into each IMP.

Mitigation Measure 4.3.3: No maintenance activities within a proposed annual maintenance program shall be initiated until the City's ADD Environmental Designee and Mitigation Monitoring Coordinator (MMC) have approved the qualifications for biologist(s) who shall be responsible for monitoring maintenance activities which may impact sensitive biological resources.

Mitigation Measure 4.3.4: Prior to undertaking any maintenance activity included in an annual maintenance program, a mitigation account shall be established to provide sufficient funds to implement all biological mitigation associated with the proposed maintenance activities. The fund amount shall be determined by the ADD Environmental Designee. The account shall be managed by the City's SWD, with quarterly status reports submitted to DSD. The status reports shall separately identify upland and wetland account activity. Based upon the impacts identified in the IBAs, money shall be deposited into the account, as part of the project submittal, to ensure available funds for mitigation.

Mitigation Measure 4.3.5: Prior to commencing any activity that could impact wetlands, evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

Mitigation Measure 4.3.6: Prior to commencing any activity where the IBA indicates significant impacts to biological resources may occur, a pre-maintenance meeting shall be held on site with the following in attendance: City's SWD Maintenance Manager (MM), MMC, and Maintenance Contractor (MC). The biologist selected to monitor the activities shall be present. At this meeting, the monitoring biologist shall identify and discuss the maintenance protocols that apply to the maintenance activities.

At the pre-maintenance meeting, the monitoring biologist shall submit to the MMC and MC a copy of the maintenance plan (reduced to 11"x17") that identifies areas to be protected, fenced, and monitored. This data shall include all planned locations and design of noise attenuation walls or other devices. The monitoring biologist also shall submit a maintenance schedule to the MMC and MC indicating when and where monitoring is to begin and shall notify the MMC of the start date for monitoring.

Mitigation Measure 4.3.7: Within three months following the completion of mitigation monitoring, two copies of a written draft report summarizing the monitoring shall be prepared by the monitoring biologist and submitted to the MMC for approval. The draft monitoring report shall describe the results including any remedial measures that were required. Within 90 days of receiving comments from the MMC on the draft monitoring report, the biologist shall submit one copy of the final monitoring report to the MMC.

Mitigation Measure 4.3.8: Within six months of the end of an annual storm water facility maintenance program, the monitoring biologist shall complete an annual report which shall be distributed to the following agencies: the City of San Diego DSD, CDFG, RWQCB, USFWS, and Corps. At a minimum, the report shall contain the following information:

- Tabular summary of the biological resources impacted during maintenance and the mitigation;
- Master table containing the following information for each individual storm water facility or segment which is regularly maintained;
- Date and type of most recent maintenance;
- Description of mitigation which has occurred; and
- Description of the status of mitigation which has been implemented for past maintenance activities.

Mitigation Measure 4.3.9: Wetland impacts resulting from maintenance shall be mitigated in one of the following three ways: (1) habitat creation, restoration, and/or enhancement concurrent with maintenance, (2) habitat creation, restoration, and/or enhancement prior to maintenance, or (3) mitigation credits. When mitigation is proposed to be accomplished through concurrent creation, restoration or enhancement, the amount of planting shall be in accordance with ratios in Table 4.3-10. When previously created, restored or enhanced wetland habitat is proposed to be used for mitigation, the ratio shall be 1:1, provided the habitat has been determined to be successfully established by the ADD Environmental Designee in consultation with the Resource Agencies prior to commencing the maintenance activity. Mitigation credits may be used at a ratio of 1:1, provided the mitigation credits are from a mitigation bank which has been approved by the Resource Agencies. No maintenance shall commence until the ADD Environmental Designee has determined that mitigation is proposed for a specific maintenance activity meets one of these three options.

WETLAND TYPE	MITIGATION RATIO¹
Southern riparian forest	3:1
Southern sycamore riparian woodland	3:1
Riparian woodland	3:1
Coastal saltmarsh	4:1
Coastal brackish marsh	4:1
Southern willow scrub	2:1
Mule fat scrub	2:1
Riparian scrub	2:1
Freshwater marsh	1:1
Cismontane alkali marsh	4:1
Disturbed wetland	1:1
Streambed/natural flood channel	NA

¹Mitigation done in advance or through purchase of mitigation credits would be at a 1:1 ratio.

Mitigation locations for wetland impacts shall be selected using the following order of preference, based on the best mitigation value to be achieved.

1. Within impacted watershed, within City limits.
2. Within impacted watershed, outside City limits on City-owned or other publicly-owned land.
3. Outside impacted watershed, within City limits.
4. Outside impacted watershed, outside City limits on City-owned or other publically-owned land.

In order to mitigate for impacts in an area outside the limits of the watershed within which the impacts occur, the SWD must demonstrate to the satisfaction of the ADD Environmental Designee in consultation with the Resource Agencies that no suitable location exists within the impacted watershed.

Mitigation Measure 4.3.10: Whenever maintenance will impact wetland vegetation, a wetland mitigation plan shall be prepared in accordance with the Conceptual Wetland Restoration Plan contained in Appendix H of the Biological Technical Report, included as Appendix D.3 of the PEIR.

Mitigation which involves habitat enhancement, restoration or creation shall include a wetland mitigation plan containing the following information:

- Conceptual planting plan including planting zones, grading, and irrigation;
- Seed mix/planting palette;
- Planting specifications;
- Monitoring program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation which involves habitat acquisition and preservation shall include the following:

- Location of proposed acquisition;
- Description of the biological resources to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the mitigation area would be adequately preserved and maintained in perpetuity.

Mitigation which involves the use of mitigation credits shall include the following:

- Location of the mitigation bank;
- Description of the credits to be acquired including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact; and
- Documentation that the credits are associated with a mitigation bank which has been approved by the appropriate Resource Agencies.

Mitigation Measure 4.3.11: Upland impacts shall be mitigated through payment into the City's Habitat Acquisition Fund, acquisition and preservation of specific land, or purchase of mitigation credits in accordance with the ratios identified in Table 4.3-11. Upland mitigation shall be completed within six months of the date the related maintenance has been completed.

Vegetation Type	Tier	Location of Impact with Respect to the MHPA	
		Inside	Outside
Coast live oak woodland	I	2:1	1:1
Scrub oak chaparral	I	2:1	1:1
Southern foredunes	I	2:1	1:1
Beach	I	2:1	1:1
Diegan coastal sage scrub	II	1:1	1:1
Coastal sage-chaparral scrub	II	1:1	1:1
Broom baccharis scrub	II	1:1	1:1
Southern mixed chaparral	IIA	1:1	0.5:1

Vegetation Type	Tier	Location of Impact with Respect to the MHPA	
		Inside	Outside
Non-native grassland	IIIB	1:1	0.5:1
Eucalyptus woodland	IV	--	--
Non-native vegetation/ornamental	IV	--	--
Disturbed habitat/ruderal	IV	--	--
Developed	IV	--	--

¹Assumes mitigation occurs within an MHPA

Mitigation Measure 4.3.12: Loss of habitat for the coastal California gnatcatcher shall be mitigated through the acquisition of suitable habitat or mitigation credits at a ratio of 1:1. Mitigation shall take place within the MHPA, and shall be accomplished within six months of the date maintenance is completed.

Mitigation Measure 4.3.13: Prior to commencing any maintenance activity which may impact sensitive biological resources, the monitoring biologist shall verify that the following actions have been taken, as appropriate:

- Fencing, flagging, signage, or other means to protect sensitive resources to remain after maintenance have been implemented;
- Noise attenuation measures needed to protect sensitive wildlife are in place and effective; and/or
- Nesting raptors have been identified and necessary maintenance setbacks have been established if maintenance is to occur between January 15 and August 31.

The designated biological monitor shall be present throughout the first full day of maintenance, whenever mandated by the associated IBA. Thereafter, through the duration of the maintenance activity, the monitoring biologist shall visit the site weekly to confirm that measures required to protect sensitive resources (e.g., flagging, fencing, noise barriers) continue to be effective. The monitoring biologist shall document monitoring events via a Consultant Site Visit Record. This record shall be sent to the MM each month. The MM will forward copies to MMC.

Mitigation Measure 4.3.14: Whenever offsite mitigation would result in a physical disturbance to the proposed mitigation area, the City will conduct an environmental review of the proposed mitigation plan in accordance with CEQA. If the offsite mitigation would have a significant impact on biological resources associated with the mitigation site, mitigation measures will be identified and implemented in accordance with the MMRP resulting from that CEQA analysis.

Mitigation Measure 4.3.15: Impacts to listed or endemic sensitive plant species shall be offset through implementation of one or a combination of the following actions:

- Impacted plants would be salvaged and relocated;
- Seeds from impacted plants would be collected for use at an off-site location;
- Off-site habitat that supports the species impacted shall be enhanced and/or supplemented with seed collected onsite; and/or
- Comparable habitat at an off-site location shall be preserved.

Mitigation which involves relocation, enhancement or transplanting sensitive plants shall include the following:

- Conceptual planting plan including grading and, if appropriate, temporary irrigation;
- Planting specifications;
- Monitoring Program including success criteria; and
- Long-term maintenance and preservation plan.

Mitigation Measure 4.3.16: Maintenance activities shall not occur within the following areas:

- 300 feet from any nesting site of Cooper's hawk (*Accipiter cooperii*);
- 1,500 feet from known locations of the southern pond turtle (*Clemmys marmorata pallida*);
- 900 feet from any nesting sites of northern harriers (*Circus cyaneus*);
- 4,000 feet from any nesting sites of golden eagles (*Aquila chrysaetos*); or
- 300 feet from any occupied burrow or burrowing owls (*Athene cunicularia*).

Mitigation Measure 4.3.17: If evidence indicates the potential is high for a listed species to be present, based on historical records or site conditions, then clearing, grubbing, or grading (inside and outside the MHPA) shall be restricted during the breeding season where development may impact the following species:

- Western snowy plover (between March 1 and September 15);
- Least tern (between April 1 and September 15);
- Cactus wren (between February 15 and August 15); or
- Tricolored black bird (between March 1 and August 1).

When other sensitive species, including, but not limited to, the arroyo toad, burrowing owl, or Quino checkerspot butterfly are known or suspected to be present all appropriate protocol surveys and mitigation measures shall be implemented.

Mitigation Measure 4.3.18: If a subject species is not detected during the protocol survey, the qualified biologist shall submit substantial evidence to the ADD Environmental Designee and an applicable resource agency which demonstrates whether or not mitigation measures such as noise walls are necessary between the dates stated above for each species. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

Mitigation Measure 4.3.19: If the SWD chooses not to do the required surveys, then it shall be assumed that the appropriate avian species are present and all necessary protection and mitigation measures shall be required as described in Mitigation Measure 4.3.21

Mitigation Measure 4.3.20: If no surveys are completed and no sound attenuation devices are installed, it will be assumed that the habitat in question is occupied by the appropriate species and that maintenance activities would generate more than 60dB(A) L_{eq} within the habitat requiring protection. All such activities adjacent to the protected habitat shall cease for the duration of the breeding season of the appropriate species and a qualified biologist shall establish a limit of work.

Mitigation Measure 4.3.21: If maintenance occurs during the raptor breeding season (January 15 to August 31), a pre-maintenance survey for active raptor nests shall be conducted in areas supporting suitable habitat. If active raptor nests are found, maintenance shall not occur within 300 feet of a Cooper's hawk nest, 900 feet of a northern harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest.

Mitigation Measure 4.3.22: If removal of any eucalyptus trees or other trees used by raptors for nesting within a maintenance area is proposed during the raptor breeding season (January 15 through August 31), a qualified biologist shall ensure that no raptors are nesting in such trees. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 300 feet of any nesting site of Cooper's hawk or other nesting raptor until the young fledge. Should the biologist determine that raptors are nesting, the trees shall not be removed until after the breeding season. In addition, if removal of grassland or other habitat appropriate for nesting by northern harriers, a qualified biologist shall ensure that no harriers are nesting in such areas. If maintenance occurs during the raptor breeding season, a pre-maintenance survey shall be conducted and no maintenance shall occur within 900 feet of any nesting site of northern harrier until the young fledge.

Mitigation Measure 4.3.23: If maintenance activities would occur at known localities for listed fish species or within suitable habitat for other highly sensitive aquatic species (i.e., southwestern pond turtle), avoidance or minimization measures (i.e., exclusionary fencing, dewatering of the activity area, live-trapping, and translocation to suitable habitat) must be implemented.

Mitigation Measure 4.3.24: If maintenance activities will occur within areas supporting listed and/or narrow endemic plants, the boundaries of the plant populations designated sensitive by the resource agencies will be clearly delineated with flagging or temporary fencing that must remain in place for the duration of the activity.

Mitigation Measure 4.3.25: In order to avoid impacts to nesting avian species, including those species not covered by the MSCP, maintenance within or adjacent to avian nesting habitat shall occur outside of the avian breeding season (January 15 to August 31) unless postponing maintenance would result in a threat to human life or property.

HISTORICAL RESOURCES

Potential impacts to historical resources would be reduced to below a level of significance through implementation of the following mitigation measures.

Mitigation Measure 4.4.1: Prior to commencement of the first occurrence of maintenance activity within a drainage facility included in the Master Program, an archaeologist, meeting the qualifications specified by the City's HRG, shall determine the potential for significant historical resources to occur in the maintenance area. If the archaeologist determines that the potential is moderate to high, an IHA shall be prepared. Based on the IMP for the proposed maintenance activity, the archaeologist shall determine the APE, which shall include access, staging, and maintenance areas. The IHA shall include a field survey of the APE with a Native American monitor, using the standards of the City's HRG. In addition, the archaeologist shall request a record search from the SCIC. Based on the results of the field survey and record search, the archaeologist shall conduct an archaeological testing program for any identified historical resources, using the standards of the City's HRG. If significant historical resources are identified, they shall be taken to the Historical Resources Board for designation as Historic Sites. Avoidance or implementation of an Archaeological Data Recovery Program (ADRP) and Archaeological Monitoring Program shall be required to mitigate project impacts to significant historical resources. The archaeologist shall prepare a report in accordance with City guidelines. At a minimum, the IHA report shall include:

- Description of maintenance to be performed, including length, width, and depth;
- Prehistory and History Background Discussion;
- Results of Record Search;
- Survey Methods;
- Archaeological Testing Methods;
- Impact Analysis; and
- Mitigation Recommendations, including avoidance or implementation of an ADRP and archaeological monitoring program.

In the event that the IHA indicates that no significant historical resources occur within the APE, or have the potential to occur within the APE, no further action shall be required.

Mitigation Measure 4.4.2: Prior to initiating any maintenance activity where the IHA identifies existing significant historical resources within the APE, the following actions shall be taken.

4.4.2.1 The Storm Water Department shall select a Principal Investigator (PI), who shall be approved by the ADD Environmental Designee. The PI must meet the requirements of the City's HRG.

4.4.2.2 Mitigation recommendations from the IHA shall be incorporated into the IMP to the satisfaction of the PI and the ADD Environmental Designee. Typical mitigation measures shall include but not be limited to: delineating resource boundaries on maintenance plans; implementing protective measures such as fencing, signage or capping; and selective monitoring during maintenance activities.

4.4.2.3 If impacts to significant historical resources cannot be avoided, the PI shall prepare an Archaeological Research Design and Data Recovery Program (ARDDRP) for the affected resources, with input from a Native American consultant, and the ARDDRP shall be approved by the ADD Environmental Designee. Based on the approved research design, a phased excavation program shall be conducted, which will include the participation of a Native American. The sample size to be excavated shall be determined by the PI, in consultation with City staff. The sample size shall vary with the nature and size of the archaeological site, but need not exceed 15 percent of the overall resource area. The area involved in the ARDDRP shall be surveyed, staked and flagged by the archaeological monitor, prior to commencing maintenance activities which could affect the identified resources.

4.4.2.4 A pre-maintenance meeting shall be held on-site prior to commencing any maintenance that may impact a significant historical resource. The meeting shall include representatives from the PI, the Native American consultant, Storm Water Department, Mitigation Monitoring Coordinator (MMC), Resident Engineer (RE), and Maintenance Contractor (MC). The PI shall explain mitigation measures which must be implemented during maintenance. The PI shall also confirm that all protective measures (e.g. fencing, signage or capping) are in place.

4.4.2.5 If human remains are discovered in the course of conducting the ARDDRP, work shall be halted in that area and the following procedures set forth in the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) will be taken:

- The PI shall notify the RE, and the MMC. The MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS).
- The PI shall notify the Medical Examiner, after consultation with the RE, either in person or via telephone.
- Work will be redirected away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner, in consultation with the PI, concerning the provenience of the remains.
- The Medical Examiner, in consultation with the PI, shall determine the need for a field examination to determine the provenience.
- If a field examination is not warranted, the Medical Examiner shall determine, with input from the PI, if the remains are or are most likely to be of Native American origin.
- If Human Remains are determined to be Native American, the Medical Examiner shall notify the Native American Heritage Commission (NAHC). The NAHC shall contact the PI within 24 hours after the Medical Examiner has completed coordination. The NAHC will identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information. The PI will coordinate with the MLD for additional

coordination. If (1) the NAHC is unable to identify the MLD, or the MLD fails to make a recommendation within 24 hours after being notified by the Commission; or (2) the landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, then the landowner or their authorized representative shall re-inter the human remains and all associated grave goods with appropriate dignity, on the property in a location not subject to subsurface disturbance. Information on this process will be provided to the NAHC.

- If Human Remains are not Native American, the PI shall contact the Medical Examiner and notify them of the historic era context of the burial. The Medical Examiner shall determine the appropriate course of action with the PI and City staff (PRC 5097.98). If the remains are of historic origin, they shall be appropriately removed and conveyed to the Museum of Man for analysis. The decision for reinterment of the human remains shall be made in consultation with MMC, EAS, the landowner, and the Museum.

4.4.2.6 The PI shall be responsible for ensuring: (1) that all cultural materials collected are cleaned, catalogued and permanently curated with an appropriate institution; (2) that a letter of acceptance from the curation institution has been submitted to MMC; (3) that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; (4) that faunal material is identified as to species; and (5) that specialty studies are completed, as appropriate. Curation of artifacts associated with the survey, testing and/or data recovery for this project shall be completed in consultation with LDR and the Native American representative, as applicable.

4.4.2.7 The Archaeologist shall be responsible for updating the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B associated with the ARDDRP in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the SCIC with the Final Results Report.

4.4.2.8 The PI shall prepare a Draft Results Report (even if negative) that describes the results, analysis and conclusions of the ARDDRP (with appropriate graphics). The MMC shall return the Draft Results Report to the PI for revision or for preparation of the Final Report. The PI shall submit the revised Draft Results Report to MMC for approval. The MMC shall provide written verification to the PI of the approved report. The MMC shall notify the RE of receipt of all Draft Result Report submittals and approvals. The MMC shall notify the RE of receipt of the Final Results Report.

Mitigation Measure 4.4.3: Prior to initiating any maintenance activity where the IHA identifies a moderate to high potential for the occurrence of significant historical resources within the APE, the following actions shall be taken:

4.4.3.1 Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the

Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable maintenance documents through the plan check process.

- B. Letters of Qualification have been submitted to ADD
 - 1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
 - 2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
 - 3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

4.4.3.2 Prior to Start of Maintenance

- A. Verification of Records Search
 - 1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
 - 2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
 - 3. The PI may submit a detailed letter to MMC requesting a reduction to the 1/4 mile radius.
- B. PI Shall Attend Pre-maintenance Meetings
 - 1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Pre-maintenance Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Maintenance Manager (MM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Pre-maintenance Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Maintenance Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Pre-maintenance Meeting, the Applicant shall schedule a focused Pre-maintenance Meeting with MMC, the PI, RE, MM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate maintenance documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
 - b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
 - c. MMC shall notify the PI that the AME has been approved.
4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a maintenance schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during maintenance requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final maintenance documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Maintenance Schedule
After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Maintenance Schedule from the MM.

4.4.3.3 During Maintenance

- A. Monitor Shall be Present During Grading/Excavation/Trenching
 1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. **The Maintenance Manager is responsible for notifying the RE, PI, and MMC of changes to any maintenance activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.**
 2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Sections 4.4.3.3.B-C and 4.4.3.4-A-D shall commence.

3. The PI may submit a detailed letter to MMC during maintenance requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVSR). The CSVSR's shall be faxed by the MM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section 4.4.3.4 below.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
 - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, MM and RE. ADRP and any mitigation must be approved by MMC, RE and/or MM before ground disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.**
 - (1).Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
 - c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final

Monitoring Report. The letter shall also indicate that that no further work is required.

- (1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
- (2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
 - a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
 - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section 4.4.3.6-A.
 - c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
 - d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

4.4.3.4 Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior

Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.

2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
 - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
 - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
 - c. To protect these sites, the landowner shall do one or more of the following:
 - (1) Record the site with the NAHC;
 - (2) Record an open space or conservation easement; or
 - (3) Record a document with the County.
 - d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of

the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 4.4.3.5-c., above.

- D. If Human Remains are **NOT** Native American
1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
 2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
 3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

4.4.3.5 Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Pre-maintenance meeting.
 2. The following procedures shall be followed.
 - a. No Discoveries
In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSV and submit to MMC via fax by 8AM of the next business day.
 - b. Discoveries
All discoveries shall be processed and documented using the existing procedures detailed in Sections 4.4.3.3 - During Maintenance, and 4.4.3.4 - Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
 - c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section 4.4.3.3 During Maintenance and Section 4.4.3.4-Discovery of Human Remains shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section 4.4.3.3-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of maintenance
1. The Maintenance Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

4.4.3.6 Post Maintenance

A. Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
 - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with State of California Department of Parks and Recreation

The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts

1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification

1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.

2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section 4.4.3.4 – Discovery of Human Remains, Subsection C.
 3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
 4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
 5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

LAND USE

Potential impacts to land use policies in the City's General Plan would be reduced to below a level of significance through implementation of the following mitigation measures.

Mitigation Measure 4.1.1: Prior to commencing maintenance on any storm water facility within, or immediately adjacent to, a Multi-Habitat Planning Area (MHPA), the ADD Environmental Designee shall verify that all MHPA boundaries and limits of work have been delineated on all maintenance documents.

Mitigation Measure 4.1.2: A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) recovery permit) shall survey those habitat areas inside and outside the MHPA suspected to serve as habitat (based on historical records or site conditions) for the coastal California gnatcatcher, least Bell's vireo and/or other listed species. Surveys for the appropriate species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service. When other sensitive species, including, but not limited to, the arroyo toad, burrowing owl, or Quino checkerspot butterfly are known or suspected to be present all appropriate protocol surveys and mitigation measures identified in Subchapter 4.3, Biological Resources, required shall be implemented.

Mitigation Measure 4.1.3: If a listed species is located within 500 feet of a proposed maintenance activity and maintenance would occur during the associated breeding season, an analysis of the noise generated by maintenance activities shall be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD Environmental Designee. The

analysis shall identify the location of the 60 dB(A) L_{eq} noise contour on the maintenance plan. The report shall also identify measures to be undertaken during maintenance to reduce noise levels.

Mitigation Measure 4.1.4: Based on the location of the 60 dB(A) L_{eq} noise contour and the results of the protocol surveys, the Project Biologist shall determine if maintenance has the potential to impact breeding activities of listed species. If one or more of the following species are determined to be significantly impacted by maintenance, then maintenance (inside and outside the MHPA) shall avoid the following breeding seasons unless it is determined that maintenance is needed to protect life or property.

- Coastal California gnatcatcher (between March 1 and August 15 inside the MHPA only; no restrictions outside MHPA);
- Least Bell's vireo (between March 15 and September 15); and
- Southwestern willow flycatcher (between May 1 and September 1).

Mitigation Measure 4.1.5: If maintenance is required during the breeding season for a listed bird to protect life or property, then the following conditions must be met:

- At least two weeks prior to the commencement of maintenance activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from maintenance activities shall not exceed 60 dB(A) hourly average at the edge of occupied habitat. Concurrent with the commencement of maintenance activities and the maintenance of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated maintenance activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season of the subject species, as noted above.
- Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.
- Prior to the commencement of maintenance activities that would disturb sensitive resources during the breeding season, the biologist shall ensure that all fencing, staking and flagging identified as necessary on the ground have been installed properly in the areas restricted from such activities.

- If noise attenuation walls or other devices are required to assure protection to identified wildlife, then the biologist shall make sure such devices have been properly constructed, located and installed.

Mitigation Measure 4.1.6: A pre-maintenance meeting shall be held with the Maintenance Contractor, City representative and the Project Biologist. The Project Biologist shall discuss the sensitive nature of the adjacent habitat with the crew and subcontractor. Prior to the pre-maintenance meeting, the following shall be completed:

- The Storm Water Division (SWD) shall provide a letter of verification to the Mitigation Monitoring Coordination Section stating that a qualified biologist, as defined in the City of San Diego Biological Resources Guidelines, has been retained to implement the projects MSCP monitoring Program. The letter shall include the names and contact information of all persons involved in the Biological Monitoring of the project. At least thirty days prior to the pre-maintenance meeting, the qualified biologist shall submit all required documentation to MMC, verifying that any special reports, maps, plans and time lines, such as but not limited to, revegetation plans, plant relocation requirements and timing, MSCP requirements, avian or other wildlife protocol surveys, impact avoidance areas or other such information has been completed and updated.
- The limits of work shall be clearly delineated. The limits of work, as shown on the approved maintenance plan, shall be defined with orange maintenance fencing and checked by the biological monitor before initiation of maintenance. All native plants or species of special concern, as identified in the biological assessment, shall be staked, flagged and avoided within Brush Management Zone 2, if applicable.

Mitigation Measure 4.1.7: Maintenance plans shall be designed to accomplish the following.

- Invasive non-native plant species shall not be introduced into areas adjacent to the MHPA. Landscape plans shall contain non-invasive native species adjacent to sensitive biological areas, as shown on the approved maintenance plan.
- All lighting adjacent to, or within, the MHPA shall be shielded, unidirectional, low pressure sodium illumination (or similar) and directed away from sensitive areas using appropriate placement and shields. If lighting is required for nighttime maintenance, it shall be directed away from the preserve and the tops of adjacent trees with potentially nesting raptors, using appropriate placement and shielding.
- All maintenance activities (including staging areas and/or storage areas) shall be restricted to the disturbance areas shown on the approved maintenance plan. The project biologist shall monitor maintenance activities, as needed, to ensure that maintenance activities do not encroach into biologically sensitive areas beyond the limits of work as shown on the approved maintenance plan.
- No trash, oil, parking or other maintenance-related activities shall be allowed outside the established maintenance areas including staging areas and/or storage areas, as shown on

the approved maintenance plan. All maintenance related debris shall be removed off-site to an approved disposal facility.

Mitigation Measure 4.1.8: Prior to commencing any maintenance in, or within 500 feet of any area determined to support coastal California gnatcatchers, the ADD Environmental Designee shall verify that the MHPA boundaries and the following project requirements regarding the coastal California gnatcatcher are shown on the maintenance plans:

NO MAINTENANCE ACTIVITIES SHALL OCCUR BETWEEN MARCH 1 AND AUGUST 15, THE BREEDING SEASON OF THE COASTAL CALIFORNIA GNATCATCHER, UNTIL THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE ADD ENVIRONMENTAL DESIGNEE:

- a. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE HABITAT AREAS WITHIN THE MHPA THAT WOULD BE SUBJECT TO MAINTENANCE NOISE LEVELS EXCEEDING 60 DECIBELS [dB(A)] HOURLY AVERAGE FOR THE PRESENCE OF THE COASTAL CALIFORNIA GNATCATCHER. SURVEYS FOR THE COASTAL CALIFORNIA GNATCATCHER SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF ANY MAINTENANCE. IF GNATCATCHERS ARE PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:
 1. BETWEEN MARCH 1 AND AUGUST 15, MAINTENANCE OF OCCUPIED GNATCATCHER HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND
 2. BETWEEN MARCH 1 AND AUGUST 15, NO MAINTENANCE ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE MAINTENANCE ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED GNATCATCHER HABITAT. AN ANALYSIS SHOWING THAT NOISE GENERATED BY MAINTENANCE ACTIVITIES WOULD NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES. PRIOR TO THE

COMMENCEMENT OF MAINTENANCE ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR

3. AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN, NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM MAINTENANCE ACTIVITIES WILL NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE COASTAL CALIFORNIA GNATCATCHER. CONCURRENT WITH THE COMMENCEMENT OF MAINTENANCE ACTIVITIES AND THE MAINTENANCE OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dB(A) HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED MAINTENANCE ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (AUGUST 16).

* Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD environmental designee, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.

- b. IF COASTAL CALIFORNIA GNATCATCHERS ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MARCH 1 AND AUGUST 15 AS FOLLOWS:

1. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR COASTAL CALIFORNIA GNATCATCHER TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.
2. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.

PALEONTOLOGICAL RESOURCES

Potential impacts to paleontological resources would be reduced to below a level of significance through implementation of the following mitigation measures.

Mitigation Measure 4.7.1: Prior to initiating any maintenance activity where significant paleontological resources may occur within the APE, the following actions shall be taken.

4.7.1.1 Prior to Permit Issuance or Bid Opening/Bid Award

- A. Entitlements Plan Check
 1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate maintenance documents.
- B. Letters of Qualification have been submitted to ADD
 1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the paleontological monitoring program, as defined in the City of San Diego Paleontology Guidelines.
 2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the project.
 3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

4.7.1.2 Prior to Start of Maintenance

- A. Verification of Records Search
 1. The PI shall provide verification to MMC that a site specific records search has been completed. Verification includes, but is not limited to a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
 2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Pre-maintenance Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Pre-maintenance Meeting that shall include the PI, Maintenance Manager (MM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Pre-maintenance Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Maintenance Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Pre-maintenance Meeting, the Applicant shall schedule a focused Pre-maintenance Meeting with MMC, the PI, RE, MM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.
3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate maintenance documents (reduced to 11x17) to MMC for approval identifying the areas to be monitored including the delineation of grading/excavation limits. Monitoring shall begin at depths below 10 feet from existing grade or as determined by the PI in consultation with MMC. The determination shall be based on site specific records search data which supports monitoring at depths less than ten feet.
 - b. The PME shall be based on the results of a site specific records search as well as information regarding existing known soil conditions (native or formation).
 - c. MMC shall notify the PI that the PME has been approved.
4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a maintenance schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during maintenance requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final maintenance documents which indicate conditions such as depth of excavation and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.
5. Approval of PME and Maintenance Schedule
After approval of the PME by MMC, the PI shall submit to MMC written authorization of the PME and Maintenance Schedule from the MM.

4.7.1.3 During Maintenance

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, jacking and receiving

pits, services and all other appurtenances associated with underground utilities as identified on the PME that could result in impacts to formations with high and/or moderate resource sensitivity. **The Maintenance Manager is responsible for notifying the RE, PI, and MMC of changes to any maintenance activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the PME.**

2. The PI may submit a detailed letter to MMC during maintenance requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.
3. The monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV's shall be faxed by the MM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Paleontological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or BI, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.

C. Determination of Significance

1. The PI shall evaluate the significance of the resource.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
 - b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC, MC and/or RE. PRP and any mitigation must be approved by MMC, RE and/or MM before ground disturbing activities in the area of discovery will be allowed to resume.
 - (1).Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
 - c. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or BI as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to monitor the area without notification to MMC

unless a significant resource is encountered.

- d. The PI shall submit a letter to MMC indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.

- (1).Note: For Pipeline Trenching Projects Only. If the fossil discovery is limited in size, both in length and depth; the information value is limited and there are no unique fossil features associated with the discovery area, then the discovery should be considered not significant.

- (2).Note, for Pipeline Trenching Projects Only: If significance cannot be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching Projects

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance.

1. Procedures for documentation, curation and reporting

- a. One hundred percent of the fossil resources within the trench alignment and width shall be documented in-situ photographically, drawn in plan view (trench and profiles of side walls), recovered from the trench and photographed after cleaning, then analyzed and curated consistent with Society of Invertebrate Paleontology Standards. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact and so documented.
- b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section 4.7.1.1-A.
- c. The PI shall be responsible for recording (on the appropriate forms for the San Diego Natural History Museum) the resource(s) encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines. The forms shall be submitted to the San Diego Natural History Museum and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

4.7.1.4 Night and/or Weekend Work

A. If night and/or weekend work is included in the contract

1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Pre-maintenance meeting.
2. The following procedures shall be followed.
 - a. No Discoveries
In the event that no discoveries were encountered during night and/or weekend work, The PI shall record the information on the CSV and submit to MMC via the RE via fax by 8AM on the next business day.
 - b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections 4.7.1.3 - During Maintenance.

- c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section 4.1.7.3 - During Maintenance shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8AM on the next business day to report and discuss the findings as indicated in Section 4.7.1.3-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of maintenance
1. The Maintenance Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

4.7.1.5 Post Maintenance

- A. Preparation and Submittal of Draft Monitoring Report
1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Paleontological Guidelines which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring,
 - a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with the San Diego Natural History Museum
The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.
 2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
 3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
 4. MMC shall provide written verification to the PI of the approved report.
 5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Fossil Remains
1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.

- C. Curation of artifacts: Deed of Gift and Acceptance Verification
 1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
 2. The PI shall submit the Deed of Gift and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
 3. The RE or BI, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.
 4. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

- D. Final Monitoring Report(s)
 1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

WATER QUALITY

Potential impacts to water quality would be reduced to below a level of significance through implementation of the following mitigation measures.

Mitigation Measure 4.8.1: Prior to commencement of any activity within a specific annual maintenance program, a qualified water quality specialist shall prepare an IWQA for each area proposed to be maintained. The IWQA shall be prepared in accordance with the specifications included in the Master Program. If the IWQA indicates that maintenance would impact a water pollutant where the existing level for that pollutant exceeds or is within 25 percent of the standard established by the San Diego Basin Plan, mitigation measures identified in Table 4.8-8 shall be incorporated into the IMP to reduce the impact to within the established standard for that pollutant.

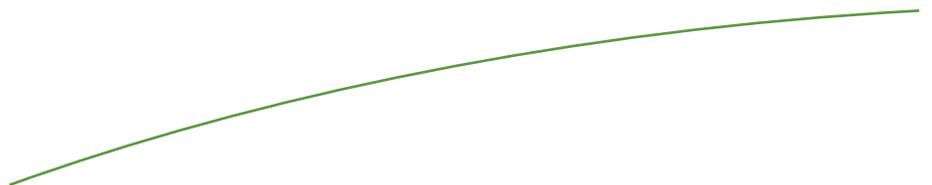
Mitigation Measure 4.8.2: No maintenance activities within a proposed annual maintenance program shall be initiated before the City's ADD Environmental Designee and state and federal agencies with jurisdiction over maintenance activities have approved the IMPs and IWQAs including proposed mitigation and BMPs for each of the proposed activities. In their review, the ADD Environmental Designee and agencies shall also confirm that the appropriate maintenance protocols have been incorporated into each IMP.

Mitigation Measure 4.8.3: Prior to commencing any activity where the IWQA indicates significant water quality impacts may occur, a pre-maintenance meeting shall be held on site with following in attendance: City's SWD, MM, MMC, and MC. A qualified water quality specialist shall also be present. At this meeting, the water quality specialist shall identify and discuss mitigation measures, protocols and BMPs identified in the IWQA that must be carried out during maintenance. After the meeting, the water quality specialist shall provide DSD with a letter indicating that the applicable mitigation measures, protocols and BMPs identified in the IWQA have been appropriately implemented.

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Chapter 12.0
REFERENCES



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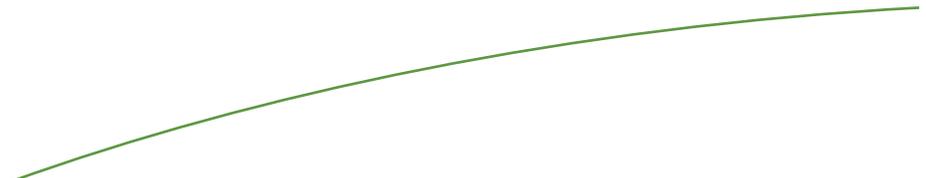
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Chapter 13.0
INDIVIDUALS AND AGENCIES CONSULTED



CHAPTER 13.0 – INDIVIDUALS AND AGENCIES CONSULTED

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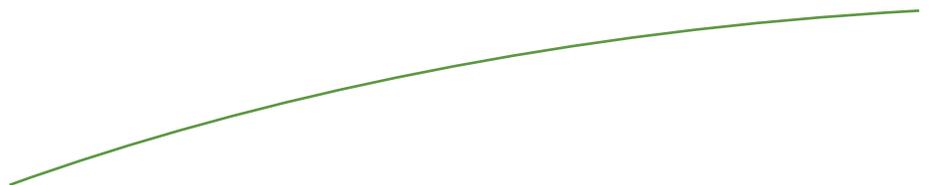
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Chapter 14.0
CERTIFICATION PAGE



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